

California State Journal of Medicine.

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Medical Society of the State of California

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EDITORIAL NOTES

JUNE 21; A. M. A.; EXPOSITION.

Remember the time—the third week in June; the week beginning Monday, June 21st. On Monday the House of Delegates begins its work and on Tuesday the scientific sections begin their programs in the afternoon, the forenoon being given over to the general public session at which various addresses are made (the Governor and the Mayor have been invited to speak) and the President-Elect, who at that time becomes the President, makes his presidential address. This meeting will be held in the Columbia Theater, but all other meetings will be held in the Auditorium building at the Civic Center. For your own sake and the sake of your patients, do not, if you can possibly help it, fail to take advantage of the opportunity presented to you this year; it will never occur again. The sessions of the A. M. A. are always instructive and more than well worthwhile; you cannot fail to profit from them. And the Exposition in itself is a liberal education to anyone. There are a great number of exhibits that are extremely instructive to physicians, and in order to make it more easy for them to see these things that are directly in their line of activity, it is the intention of the Committee of Arrangements to get up a sort of catalog of such exhibits, giving their location in the various buildings. It has been the feeling on the part of a number of members of the Association that it is not wise to meet in an "exposition city." However, if all the members could spend a week or so studying the exhibits that are directly instructive to physicians, it would do them at least as much good as to listen to the various papers and discussions; though this may be held as heresy!

HOTEL RATES.

A rumor got started through the East, that the hotel rates in San Francisco had been raised beyond the limit of the roof and that everyone who came here would be surely robbed. This is most untrue. There are thousands of rooms, all in clean, new, safe buildings, all with running hot and cold water, steam heat, etc., and most of them with private bath, telephone, etc., that are to be had for from \$2.00 to \$3.50 a day. It is true that in the three or four more widely advertised and prominent hotels, the rates appear to have been slightly increased. It is more apparent than real, however, for the fact is that the managers of these hotels, wishing them to hold as many people as possible, have endeavored to make each room take care of two or more people and have based their rates on that principle. A room with bath at \$7.00 a day for two people, is but \$3.50 each person, and this is just about the same rate that is charged in hotels of the same class and character in all large cities like New York and Chicago. Our eastern friends must remember that this was always a city of hotels and apartment houses and that it is much more so since the fire. Also, that all of the present hotels are new; every one of them has been built within the last eight years and so the result is something unique—every hotel in the city is new, modern, clean and safe; most of them are class "A" (so-called "fire-proof") buildings. The restaurants have not recently increased their prices, though, as we all know, the cost of living has increased steadily in the last few years and San Francisco has not been favored in this respect above other cities. The larger and finer restaurants are, always have been, and always will be expensive places to eat in. But if one eats in a Palace or a Waldorf-Astoria he expects to pay well for it—though he generally gets what he pays for. There are any number of excellent restaurants where meals can be had for moderate prices, and that these are good is indicated by the way they are patronized by the residents of the city who know its ways and like good things to eat. There will be no Gouging!

DIPHTHERIA EPIDEMIC; WARNING.

The epidemic of diphtheria in San Francisco brought forth some distinctly good things. It was made the subject of a discussion before the County Medical Society, and the School Directors, Health Board, etc., were invited to and did attend and participate. The school people wanted to know whether the medical people would advise the closing of the schools in which a number of cases had occurred, and were quite emphatically told "No"! The reasons for the "No" are well set forth in the paper read by Dr. Sawyer of the State Hygienic Laboratory, whose address is remarkable for the amount of valuable material contained in such small compass. Incidentally, we should by no means forget the modest warning which Dr. Sawyer voices and should look forward to a steady increase in diphtheria and endeavor to find some way to clean up the dangerous "carriers." Also, it was pointed out by Dr. Topping

that in many sections of the city it was impossible to secure from the pharmacies which are supposed to have them on hand, the culture tubes and swabs supposedly supplied by the Board of Health; or when any were on hand, they were too old and nearly or quite dried up. The druggists explained that they had great difficulty in prying these tubes out of the Board of Health and could get them only in very small numbers and by sending for them repeatedly. This should by all means be corrected for one cannot minimize the possible danger of delay in some cases and of great inconvenience and annoyance in most. The medical profession will assuredly cooperate with the health board, but the latter must do its part and make the work as little irksome as may be. Look out for more diphtheria and more carriers.

OSTEOPATHIC "DOCTORS."

Of course, anyone who had studied the history of the art of treating the sick knew that the osteopath was merely a person who wanted to take some short and easy path to the golden goal of treating sick people and getting their money away from them. There are always such methods of side approach, under various names, for many people do not care how dishonest they are if they can get money by it and stay within the letter of the law. Therefore they want to be licensed to treat sick people by some new method—which means that when they get that special license, they assume to be "doctors" and the patient does not know the difference. The osteopaths and other drugless healers are doing the same thing and always have; only now they want still more—they want to have their "schools" allowed to issue the degree of doctor of medicine and they want their graduates to take the license of "physician and surgeon." Undoubtedly there are some able men who are osteopaths; but they are sadly few and they have really educated themselves in *medicine* and have more knowledge than the graduate of an osteopathic school possesses. Last year the Board of Medical Examiners examined and classified the various schools in the state, through a committee of the board, and placed upon its minutes the report of the committee. We find the following comment in relation to the Los Angeles College of Osteopathy:

"Entrance requirements: Very lax, the main desire seems to be to obtain as large as possible a number of fee paying students. Many of the students are men and women past middle life (35 and over; some over 60 years). Advanced standing is granted graduates of all osteopathic institutions. Dr. Shaw states that about a dozen such students come to them every year from other institutions and that from 30 to 40 yearly take post-graduate instruction. Drs. Shaw and Forbes stated repeatedly that their students (according to the law) do not have as much premedical education as do the physicians and surgeons. At the same time they insist upon their graduates being given unlimited or 'physician and surgeon' licenses. They absolutely decline to apply for 'drugless prac-

itioner' licenses, although they claim that they teach pure osteopathy."

"Clinic and hospital departments: The majority of the rooms are dark and require artificial lighting."

"Eye department: . . . It is stated that this eye department is a separate corporation owned by Ring and Ruddy."

And so it goes on, from one phase of the "college" work to another, each revealing and accentuating the greed of the owners and the worthlessness, from the scientific or teaching point of view, of the whole enterprise. And they want the output of this money-making plant to be licensed physicians and surgeons, the same license that the graduate of Johns Hopkins receives after all his years of hard work! And they will get it, some day soon. Is it not more and more evident that the license to practice will mean nothing, after a while, and that membership in a recognized County Medical Society must take its place in our relative attitude toward the public—or rather, the public attitude toward the real physician and surgeon?

THE CANCER PROBLEM.

A special committee of the Pennsylvania State Medical Society has been working for some time on the problem of the reduction of cancer mortality. They have hit upon a rather novel plan to secure more interest on the part of physicians and have made the suggestion that every medical journal in the country devote its July issue to the subject of cancer and to run large advertisements relating thereto. If some of our members will prepare articles on the subject of cancer, we will be glad to run them in the July issue and make further comment on the campaign to reduce the mortality from this cause. Their proposed advertisement is as follows, and we take pleasure in running it in advance—and in this place:

PHYSICIANS

Will You Help Reduce Cancer Mortality?

Seventy-five thousand people die from Cancer in the United States every year.

The public is gradually becoming alive to the "Cancer Menace" and will soon demand more active efforts from us.

Are you doing all you can to diminish Cancer Mortality among your patients?

You can help by:

1. Always being on the watch to make an early diagnosis.
2. By insisting on proper treatment WITHOUT DELAY.

REGISTER AND DIRECTORY.

The cold, bony hand of Fate seemed to have grasped and held for its very own, the last edition of the Register and Directory! Never were there so many changes and corrections to be made; never before did things seem to pile up just at the wrong time and cause delay after delay. The book which should have been issued last October or November, did not come from the press till the first week in March, and this in spite of everything that it was possible to do to hurry it along.

But at last it is out and a copy has been delivered or mailed to every member of the society. If some there be who were annoyed at the delay, will they please bear in mind the possible degree of annoyance to everyone in the State Society office—and forgive!

TO LICENSE CALIFORNIA GRADUATES WITHOUT EXAMINATION.

There is a bill before the present Legislature that looks so good at first glance, to the average citizen, that it seems likely to be well thought of by the legislators and to pass. It is a bill to license all graduates of legally chartered and reputable medical schools in California, to practice without an examination by the Board of Medical Examiners. Of course the osteopathic schools will be graduating "doctors of medicine" and of course they are legally chartered and, equally of course, they will howl mightily that they are most "reputable"—in spite of the minutes of the Board of Examiners!

VENARSEN.

This product, prepared by the H. M. Fletcher Co., Inc., Los Angeles, California, is being extensively exploited as an intravenous injection for the treatment of syphilis, pellagra, tuberculosis, anemia, etc. This product is described in this number of the Journal, in the Department of Pharmacy and Chemistry, p. 159. It is almost criminal for physicians to use a preparation of secret composition and to administer it by intravenous injection, a method which in itself is likely to give rise to accidents.

THE IMPUDENCE OF T. FLOYD BROWN, M. D.

Unfortunately he is really a graduate in medicine and licensed to practice in California. His name is T. Floyd Brown and at one time he was a member of the Los Angeles County Medical Association, but he was dropped from that organization for unethical conduct. He keeps up the same sort of conduct, but like most of his kind, is a plausible talker and writer and may deceive some of our less suspicious members. He is promoting a special "no-detention" secret treatment of his own, for the morphine-opium habit, and has sent circular letters to a great many, if not all, physicians in this state. He announces in one of his circulars that he has opened a San Francisco office (headquarters being in Los Angeles) and in letters states that he has secured the services of a physician in San Francisco to look after his business. The physician mentioned called at the JOURNAL office and stated emphatically that he would have none of T. Floyd Brown or his treatment or his methods. Quite a nice mess. Just remember something of the record of T. Floyd Brown, when his letters and circulars come to your office, and cast them into the waste basket.

OUR LAW DEPARTMENT.

Every activity of the Society is growing, and this includes the work of our legal department. The actual defense of alleged malpractice suits is only a part of the work; our attorneys do a great deal of work for the members, in smoothing things over, preventing suits, advising, and the like. We should appreciate this and co-operate with them. Our members should bring to our attorneys their law work outside of suits and threats for damages; such work as the preparation of wills, deeds, contracts, etc. Our attorneys are the best all-around attorneys that we can secure and they can attend to your private work as well as to your interests when you are threatened or sued by some disgruntled patient. That is, if they have the time. We now have first-class attorneys representing us in several centers and before long we will undoubtedly have a legal representative in nearly all of the larger places in the state. Do not think or feel as one physician did, who said to one of our attorneys: "I suppose you specialize on malpractice cases, and you would not attend to drawing my will"! This shows a sad lack of understanding of a lawyer's business, for he would not be a good lawyer to defend you in a malpractice suit if he were not a good lawyer in every way; with a sound knowledge of the law in general and a first-class understanding of procedure and general law practice. In a letter, one of our attorneys, discussing several matters of general interest to the Society, said: "The handling of malpractice cases is a losing proposition from a lawyer's standpoint, as commercial work is not as difficult work and pays him directly and indirectly very much more." It is evident that eventually the Society will be doing a great deal of law work for its members, but the members must come in closer touch with our attorneys and the relations between them must be more friendly and more personal and must not be confined to this one subject of malpractice matters.

MEDICAL DEFENSE DISCUSSION.

Two communications of importance have been received in answer to the request to our members to set forth their views on the subject of medical defense by the Society and the rules pertaining thereto. Dr. Kreutzmann brings out some very broad general principles which may well be carefully thought over and perchance acted upon in the future; there seems no reason why a stupid judge should not be made to know that we are aware of his stupidity or injustice; and such things do happen.

Dr. Juilly brings up a number of detail points and they are open for discussion. Does it work a hardship on any physician to require that he shall not sue to collect an account within one year without first putting his case and account before the Council? Many physicians do not approve of suing for accounts at all. Dr. Juilly is wrong in some of his assumptions. The majority of people who refuse to pay their accounts and threaten counter suits do not belong to the migratory class of hotel dwellers. And as a matter of business

sense, is it wise to pay out \$500 to \$1000 in order to collect fifty or a hundred? The doctor is correct in saying that the Medical Defense feature has built up and solidified the Society; over 90% of all assessments were paid before the first of March. The fundamental principle of the rules that have been made is, as stated, to protect the careful members against the burden which might be placed upon them by the careless or inconsiderate members. Insurance companies do not "take all our risks for a certain yearly premium"; they get out of every case they can if they can find the slightest technicality. Over and over again the State Society has taken care of a member who had insurance but the company said the case did not come within their policy provisions. The expenses for medical defense are not "for the benefit of a very limited number of our members" and in only two instances since we began the work in 1909, has a member twice called upon our legal department to defend him. Cases arising from "contract practice" and the like are to be, as ordered by the House of Delegates, considered by the Council and not defended by us unless the Council approves. The various rules have been made in order to do exactly what Dr. Juilly suggests should be done—"for equal charges, benefits should be equal to all"; in other words, to protect the careful against the inroads of the careless and the inconsiderate. In regard to the suggestion of publishing the details of suits, names of members, cost, etc., our attorneys very emphatically advise against it for a number of reasons. No man likes this sort of publicity. It is not good business policy to let the world in general know about your troubles and what they cost you. It is unfair to the man who is unfortunate enough to be the victim of such proceedings and of expense to the Society. Here follow the two letters mentioned:

To the Editor,

California State Journal of Medicine:

In the January 1915 issue of the JOURNAL we are informed that owing to the ever increasing number of suits for malpractice, the medical defense department of the State Association is compelled to make a few restrictions in their work, to wit: In fracture cases no aid will be given in a suit if defendant has neglected to take an X-ray picture; also aid is refused if defendant has brought action to collect a fee inside of a year after services were rendered.

This is well and good as far as it goes, but it is symptomatic treatment and does not strike at the root of the evil.

If the expenses for defending lawsuits of the members of the State Medical Association are to be kept inside a reasonable limit, a few fundamental things have to be done.

In my opinion, the most important of all is publicity—wide publicity, for all attempted, threatened, or actually acted suits for alleged malpractice of any members of the State Society.

I know physicians are averse to having their failures, ill successes, etc., published, notwithstanding the fact that such failures and ill suc-

cesses are of daily occurrence. We hear only of wonderful cures and operations with uninterrupted recoveries, in papers and publications. But we all are having failures, we are all making errors of diagnosis, errors of judgment; only fools and ignoramuses are free from committing an error of judgment; we are, so to say, legally entitled to commit an error of judgment; what the law demands from us is the exercise of "ordinary care and skill of the profession," not the employment of the latest ephemeral fads in diagnosis or treatment, the employment of which is, unfortunately, by many considered as great care and skill.

Now, my friends, if you are really in earnest for the reduction of the number of lawsuits, and incidentally interested in an ethical uplift of the medical profession (alas, so urgently needed!), two things have to be done. The actions of a judge who sits in a court of justice, where a case of malpractice (or of collection of a medical fee) is brought, should be a matter of the closest attention and observation by the medical profession. We do not want any favors from the judiciary, but we demand a fair, impartial, fearless ruling and decision, and that is not always the case. All the judges are elected; we physicians and our friends represent a very respectable number of votes; if the judges know that their rulings and decisions are watched by the medical fraternity; that an unjust, unwarranted ruling or decision would be brought to the attention of the organized medical fraternity and made a means to campaign against their reelection—the judges would be very careful, and such manifestly unjust rulings and decisions as have been rendered in the past to the greatest detriment of honest, hard-working medical men, would become very rare.

Second, careful attention and wide publicity should be given to the testimony of medical "experts"; there is in 99 out of 100 cases some dirty, underhand work done in testifying for a plaintiff in a suit for alleged malpractice. No case can be brought into court unless the plaintiff can procure the testimony of a reputable practitioner to the effect that in handling the case defendant has not employed ordinary care and skill. It must be brought home to the profession that a physician who is willing to discuss testimony with a client or lawyer in order that a suit of malpractice against a confrere may be instituted, is a contemptible creature, not fit to mingle in decent medical society.

One can conscientiously say that almost all these suits for malpractice are attempts at extortion, blackmail suits, without any foundation in fact, without merit.

A physician who through his testimony aids and abets such a suit, a physician who expresses willingness to give testimony in such a suit; who through his willingness encourages the bringing of such a suit—that physician makes himself through his actions a party to a blackmailing crowd.

A committee should be created for the purpose of watching all legal actions against members, this committee to investigate and report to the committee on ethics. The committee on ethics should on

its own initiative, after careful investigations, institute proceedings for unethical conduct against any one so low as to become a party to a black-mailing suit. The actions of any physician who is found to have aided in such unethical despicable manner, should be widely made known throughout the medical profession by means of the medical press; the offender should without ceremony be ejected from the local County Society.

Just tackle one or two of these fellows in this way and the number of law suits for alleged malpractice—the curse of our profession—will materially decrease. It is not shielding incompetence or carelessness, but it is simply the duty of self protection to demand that a practitioner in medicine be considerate and careful in his judgment of the acts of a fellow practitioner.

Do we ever hear of law suits that have been threatened, instituted and acted before a judge? Are ever the acts of the judge criticized, the expert testimony analyzed? It is only a short time since a suit for alleged malpractice was brought and acted (and lost by the plaintiff) before a superior judge in this city; do we hear anything about it?

The committee on ethics should investigate this matter of greatest importance to the medical profession and should act without fear or prejudice—it will have the hearty support of all decent members of the County and State Society.

Something has to be done!

Sincerely yours,
DR. HENRY J. KREUTZMANN.

To the Editor, California State Journal of Medicine:

I wish to make a few remarks on the subject of the Medical Defense of our State Society.

I first note that the restrictions imposed upon our members, before they can make use of this protection, are becoming more and more numerous, drastic and impracticable. When members are required to pay their dues in advance, this requirement is perfectly natural and just. But when members are required, as is done now, to wait a year before suing a refractory client, I believe this restriction works an unnecessary hardship on many of us.

The majority of the people who refuse to pay their doctors belong to that migratory class which lives in hotels and lodging houses, which constantly changes residence, and appears to be never settled anywhere. What chance has a physician to collect his fee from these people at the expiration of a year? None whatever. The redress our attorney offers us to consult him or the Secretary of the Society before bringing suit would compel these two gentlemen to read and answer a deluge of correspondence, stating facts and opinions on a thousand different cases. If his suggestion was to be put into practice, our attorney would no doubt be the first one to rescind his offer.

This dictum of our attorney can only have one aim; that of limiting as much as possible the num-

ber of malpractice suits instituted as cross complaint for the collection of money for services rendered. Now this limitation can only indicate that the defense fund of our Society is too small for the work to be done.

Our attorney's suggestion is then, without doubt, a measure of prudence; but allow me to say that, prudent or not, I believe it to be unjust for the majority of us. And this brings me to discuss the merits of our system of Medical Defense, as I see it.

We must admit, first of all, that the very principle of this defense is correct, since it allows a group of men to defend its individual members against malice and blackmail, without hardship for them, and at the same time, upholds the honor and dignity of our profession in general.

We must admit also that this defense is a good thing for our Society. Since it has been instituted, membership has no doubt augmented, dues have been paid promptly and in advance, and preclusions must have diminished in notable proportions. The members then, must have accepted this new branch of activity of their Society, as a profitable investment.

I am afraid, however, that the new restrictions imposed upon them in the exercise of their rights, and those that will no doubt be imposed later,—if they do not protest,—will finally drive our members back to the genuine and efficacious protection of private concerns which take all our risks for a certain yearly premium.

It would indeed be interesting for the general membership who pay equally for a certain legal protection, to know if they all receive their money's worth. I know very well that we all are liable to be sued for malpractice, and at a time we the least expect it. But, barring this possible restriction, I have a faint idea that our fund of medical defense is spent for the benefit of a very limited number of our members. It would be interesting to know the names of those who have already been defended, how often they have been defended, and how much money has been spent for their defense. Understand me well: I do not question here in the least, the absolute integrity of anyone connected directly or indirectly with our system of Medical Defense. I simply mean that some of our members are unfortunate enough to be made defendants to several suits; that our fund is exhausted to defend them, leaving our treasury empty to defend us.

I will explain. If we all had the same quantity of practice, among clients of the same social class, the chances of malpractice suits would be about equal among all of us. But the reality is very different.

It is evident that a surgeon, with an extensive practice, is much more liable to be sued than a practitioner who does no surgery at all. Yet both pay the same premium to our Society.

Again, some of our members who have accepted to work for some industrial accident insurance societies, and who give their services to such a great number of people,—a number so great in

fact, that, in the majority of cases, their care cannot possibly be conscientious,—do not these doctors threaten our fund of defense in a continual and not imaginary manner? And yet, these men pay no more than we do for their protection.

Would it not be fairer to have these men pay for their protection according to the risks they incur? If the rate of one or two dollars a year is considered sufficient to protect the great majority of our members, having a *really private* practice, let those who accept contract practice, or who belong to the staff of certain private hospitals pay us a premium appropriated to the increased risks they incur, or, better, let them be defended, in case of malpractice suit, by those who employ them.

If such was done, I believe it would become unnecessary to prevent members of our Society to wait a year,—that is to give our refractory clients time to disappear and make new victims,—before bringing them to justice to compel them to do their part of an honest contract.

I am more than ever a believer in mutuality; but, it seems to me that the very essence of mutuality is that for equal charges, benefits should be equal to all. Believe me,

Yours fraternally,

GEORGE H. JUILLY, M. D.,

133 Geary street.

AMERICAN

MEDICAL ASSOCIATION

Meets

SAN FRANCISCO

June 21, 22, 23, 24, 25, 1915

COME!

THE REDUCTION OF DIPHTHERIA MORBIDITY.*

WILBUR A. SAWYER, M. D., Director of the Hygienic Laboratory of the California State Board of Health.

The introduction of diphtheria antitoxin into general use in 1894 was followed in the next few years by a rapid decline in the mortality from this disease. The number of deaths from diphtheria decreased by from 50 to 75 per cent. The direct relation of this decrease to the use of antitoxin was shown by the coincident drop in the mortality in many different cities whose experiences with diphtheria were otherwise dissimilar.¹ With a curative agent so efficient as diphtheria antitoxin the number of deaths should have been reduced to a very small fraction of the total number of cases, but the rapid initial fall due to antitoxin has ceased. During the last decade the number of deaths has remained nearly at equilibrium, at about ten per cent. of the reported cases. A slight fall in this mortality as compared with the number of reported cases has occurred in recent years. It is, no doubt, largely due to a still greater use of antitoxin, and to a more complete reporting of the milder cases.

This statement of the present rather constant ratio of deaths to reported cases—approximately ten per cent.—is based on figures collected from various sources and presented in Charts I, II, and III.² In these charts the morbidity from diphtheria is shown on the basis of 1,000 of population, and the mortality on the basis of 10,000. Thus the number of deaths is ten per cent. of the number of cases when the curves coincide. The proximity of the mortality and morbidity curves for any one city shows how closely the deaths approach ten per cent. of the reported cases.

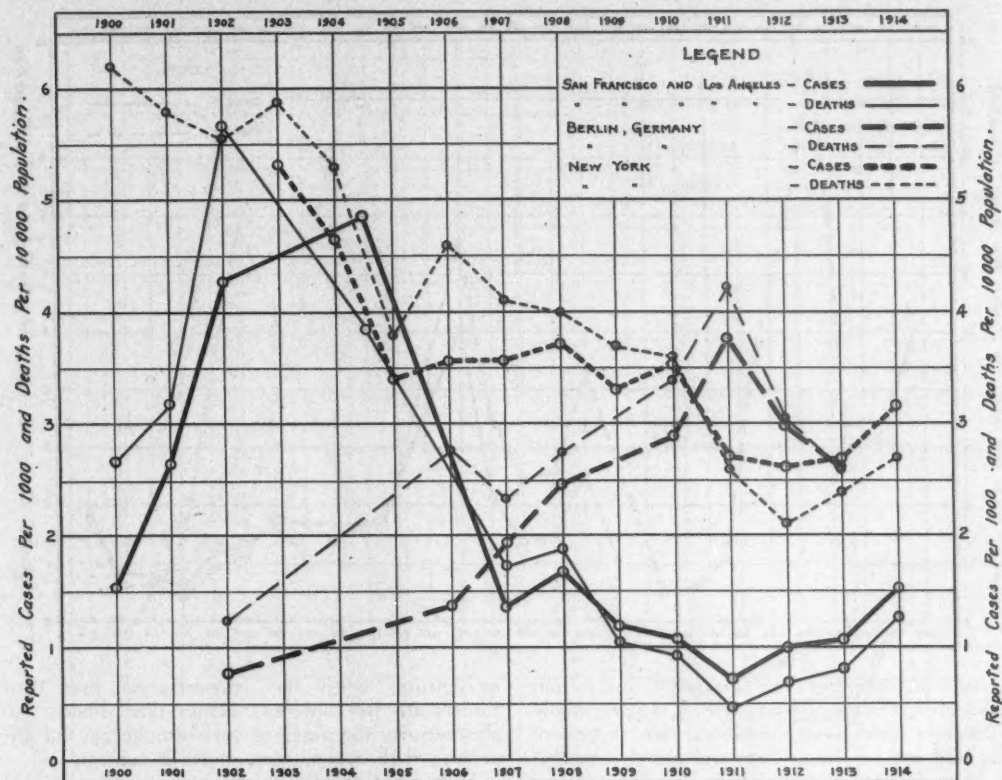
In Chart I are compared the morbidity and mortality from diphtheria in Berlin, New York, and California, the latter being represented by the combined statistics of San Francisco and Los Angeles. Enormous fluctuations in the number of deaths have occurred in opposite directions at the same time in countries using similar methods of treatment and control. By strange coincidence the height of Berlin's epidemic occurred in the same year as the lowest death rate in California. It is evident, when we consider large groups of people, that today the chief factor that determines the death rate is the number of cases, and that fluctuations are only in part attributable to present-day preventive measures. While antitoxin is capable of further reducing the relative mortality, its early and generous application is interfered with in many cases of diphtheria by ignorance, prejudice against scientific medicine, delayed or wrong diagnosis, or an exaggerated fear of anaphylaxis. These factors can be counteracted only slowly, through education and publicity. Sudden and marked lessening of the death rate through better treatment of the sick cannot hereafter be expected.

The mortality from diphtheria presents a very serious problem in America. From 1900 to 1912, inclusive, the number of deaths per annum from diphtheria and from typhoid fever in the Registra-

* Read before the San Francisco County Medical Society, February 9, 1915.

CHART I.

DIPHTHERIA MORBIDITY AND MORTALITY FOR SAN FRANCISCO AND LOS ANGELES (COMBINED), BERLIN, AND NEW YORK.



tion Area of the United States were nearly identical, the average yearly number of deaths per 10,000 population being 2.60 and 2.79 respectively.³ The deaths from the two diseases decreased gradually together. Scarlet fever, whooping cough, and measles had mortalities of 1.03, 1.12, and 0.99 per 10,000, respectively, no two of them together having a mortality as great as that of diphtheria.

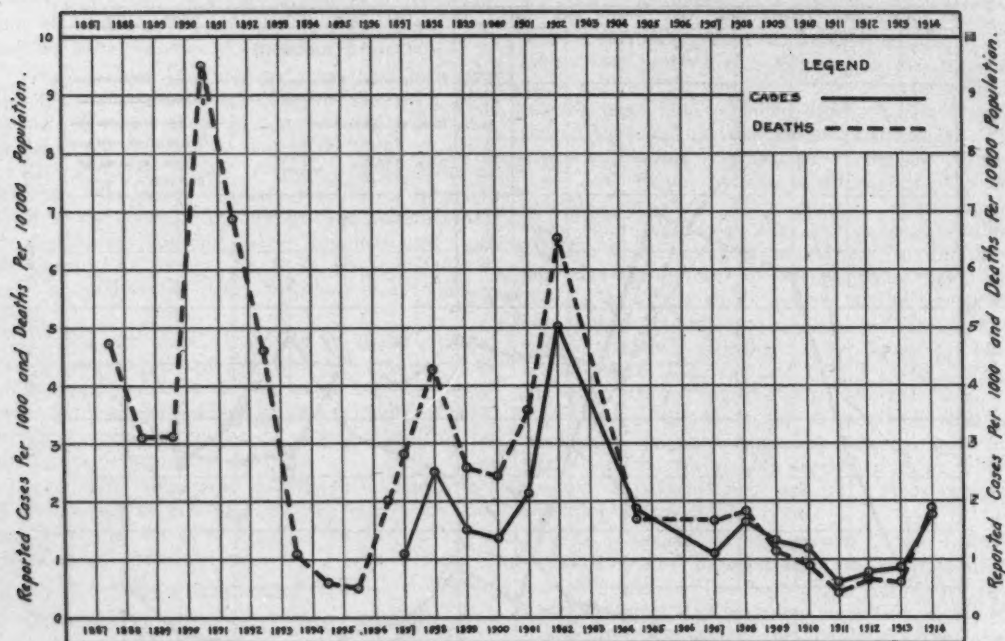
If the mortality from diphtheria varies directly with the number of cases, the most promising attack on the number of deaths will be by a supreme effort to reduce the morbidity.

It is very difficult to determine the real value of preventive measures because of the characteristic periodical fluctuations in the amount of diphtheria present in a country. Wherever the epidemiology of diphtheria has been studied it has been noticed that the disease comes in waves, widely spaced from 5 to 30 years apart. Our California experience, as represented by that of San Francisco, shown in Chart II, illustrates this periodicity. Unfortunately early statistics are not available, and Fourgeaud's description of the epidemic of 1856-1857 in California did not contain an estimate of the total mortality and morbidity.⁴ In San Francisco we have had two epidemics spaced twelve years apart, and now, twelve years later, we are apparently facing another increase in diphtheria in company with the rest of California and

with New York (see Chart I). We might attribute the rapid fall in the amount of diphtheria in California between 1902 and 1911 largely to preventive measures if the same measures had not permitted a rapid rise in Berlin at the same time, and if the great fluctuations of the San Francisco curve had not been quite independent of specific changes in our method of handling diphtheria. The causes of this periodicity may lie in changes in the infectivity and virulence of the organism, in the periodic immunization of the public during epidemics with a gradual running down of the immunity during the interval, the reintroduction of infection from other cities, or in other factors less well understood, but certainly our preventive measures are not yet sufficient to determine the shape of the curve. In Chart III the experience of our two largest cities and the state as a whole are shown to be almost identical, indicating that the important factors are common to widely separated parts of the state. It looks much as if we might expect a nation-wide increase in diphtheria during the next few years, and as if the present epidemic in San Francisco were but the first winter's installment. With this prospect before us, it is appropriate that we should examine critically the weapons which we use in fighting this disease.

The examination of diphtheria cultures for

CHART II.
DIPHTHERIA MORBIDITY AND MORTALITY FOR SAN FRANCISCO, CALIFORNIA.



diagnosis is performed free for physicians in our municipal and state laboratories. Cultures should be taken in much larger numbers than at present from mild and suspicious cases and contacts, so that the very dangerous ambulatory cases may come under control.

Quarantine as now generally practiced is helpful, but could be modified to make it much more efficient. Not infrequently we find a large family quarantined in crowded premises with the result that the members of the household infect each other repeatedly, producing some acute cases and more carriers. The number of carriers formed in this way may offset the advantage of the quarantine to the community. The emphasis should be put on the isolation and control of the individual patient, or carrier, and greater liberty, subject to repeated negative cultures from nose and throat, should be given to other members of the household, including the wage-earner. More cultures would be taken and more cases discovered if the results of being detected as a mild case or a carrier were not so serious to the entire family unit. The notoriety that goes with a large yellow sign leads many to conceal disease. Just as the neglected pest-house in the country is giving way to the modern contagious disease hospital in the city, so the conspicuous quarantine of entire households will gradually be replaced by unobtrusive isolation of the patient with a limited liberty of the other members of the family under careful official control, based to a large extent on laboratory tests. As quarantine becomes less burdensome and more efficient there will be more expense and work for health departments, but many more persons will come under control. Contacts will gladly submit

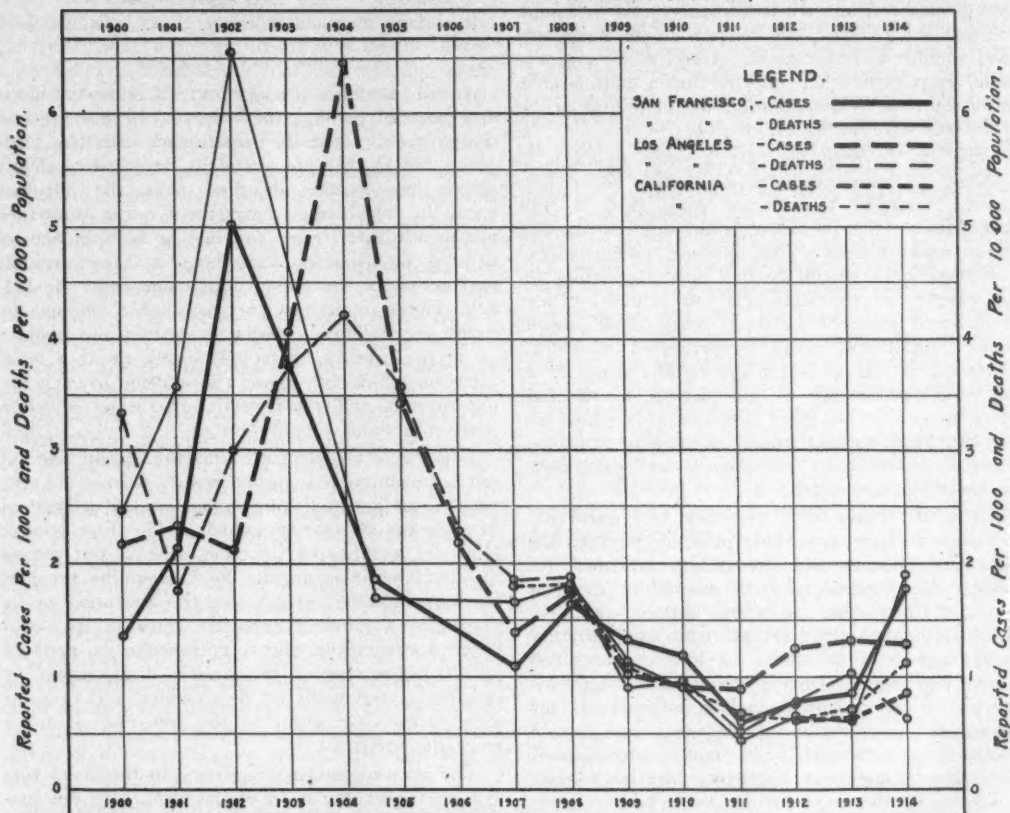
to cultures when the demonstration that their throats are free not only allows them liberty but also satisfies the fears of their employers and the persons with whom they come in contact.

Immunization with diphtheria antitoxin would not prevent many cases even if widely employed, because the passive immunity produced wears off rapidly and is difficult to demonstrate after twenty days. Physicians hesitate to use antitoxin on a large scale as a prophylactic owing to the danger of anaphylaxis in case an infection should occur a few weeks later and should necessitate therapeutic doses of the same serum. The most serious limitation in the use of antitoxin as a prophylactic remedy is that the passive immunity produced does not prevent the immunes from becoming carriers, endangering others, and perhaps developing the disease when the brief immunity wears off. Immunization, however, will become a much more efficient method of prophylaxis if the combined active and passive immunization of von Behring meets expectations and if the Schick test points out the individuals most in need of protection.

Just at present the question of fumigation in diphtheria is a frequent subject for heated argument. That routine fumigation on raising quarantine has little effect on the total number of cases is the present consensus of opinion among epidemiologists and is what we would expect from the knowledge that the greatest danger from diphtheria lies in persons, that is, recognized cases, missed cases, and carriers, rather than in things. The New York City Health Department has omitted fumigation after diphtheria in a large part of the city.⁵ Statistical evidence will thus be obtained to show whether fumigation makes an ap-

CHART III.

DIPHTHERIA MORBIDITY AND MORTALITY FOR SAN FRANCISCO, LOS ANGELES, AND CALIFORNIA.



preciable difference in the morbidity. The best we can do in the present state of our knowledge is to keep the patient's room and house in a safe condition, wherever possible, by special precautions regarding discharges, bedding, furniture, and utensils. When the case is terminated and the patient and all contacts give negative cultures there is little probability of the survival of diphtheria bacilli in dangerous numbers on objects in the house, as the bacilli usually succumb, in a few days, to drying. The official raising of quarantine should consist of a visit by an inspector who will determine in each instance the amount of disinfection necessary. In many cases which have been properly cared for no special disinfection need be required. In some a generous housecleaning would be ordered, with special attention to points of contact such as doorknobs, arms of chairs, bedding, and floors. In a few cases, especially those terminated at the height of the disease by death, a very thorough cleansing and renovating might be required, and, as a protection to those doing the work, a preliminary fumigation, controlled by bacteriological tests, could be ordered. In no event would it be necessary to fumigate schools or auditoriums. The danger there would lie in the seats and desks, the doorknobs, and other articles handled by children or adults. If these places are thoroughly cleaned

daily by washing with soap and water, with or without an added disinfectant, the protection will be much greater than could possibly come from the much more expensive and annoying fumigation of these large rooms. Why should we waste money treating the ceiling and the upper parts of walls which, if they could by any possibility become infected, would retain the organisms, where they would die a lingering death far from the reach of fingers?

The biggest problem in the prevention of diphtheria is the large number of carriers and mild unrecognized cases, which outnumber the severe cases many times over. An epidemic consists essentially of a great increase of these distributors of diphtheria bacilli, with a resulting, though smaller, increase in the number of recognized cases. Measures for the reduction of diphtheria morbidity will meet success largely through the prevention and control of carriers. In the presence of an epidemic I would recommend to cities that they organize a group of trained men to make a special business of keeping schools and playgrounds free from diphtheria carriers. By adequate supervision the public school and the playground could be made the safest place for children in the city, because they would be the only places where a child could find playmates certified, on repeated

examination, to be free from diphtheria bacilli. The school is a convenient starting-point for detecting carriers, but when a positive case is found and isolated at home, the contacts in his neighborhood should be investigated. Carriers in a group could keep each other infected for a considerable period of time, while isolation would permit many to become free in a few weeks.

What to do with the carrier when found is a problem. Chronic carriers should be under less irksome restraint than acute cases, and a full quarantine of the premises should not be imposed unless made necessary by unusual circumstances. The restrictions should be laid down according to the danger of the individual to others. Some would need enforced isolation, while others, with simple precautions, could be permitted to work. The need is not so much the rigid control of a very small percentage of our carriers, as rational restrictions for the great majority. Needless to say, the ideal method would involve a great increase in expenditures for salaries and equipment for health departments.

Above all things it is necessary for health departments to have a working plan and to keep the medical profession and the public informed regarding their methods and the reasons for changes. Too often we find conflicting advice given by physicians and health officials who are earnestly trying to assist each other. A meeting in which the work of the health department is brought before the County Medical Society is invaluable for making the co-operation of physicians and health officials more efficient. The family physician is asked many questions regarding the prevalence of disease or the need for keeping children from school, and he should be kept informed as to the exact situation.

We would do well, at this time of increasing danger, to make a plan for a state-wide campaign against diphtheria. In making this plan let us profit from the experience of the past, accepting nothing on the basis of mere tradition. With a good working plan the cities of California, in cordial co-operation, can certainly prevent a repetition of the epidemics experienced in the past.

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HAEMATOGENOUS KIDNEY INFECTIONS.*

By GRANVILLE MACGOWAN, M. D., Los Angeles.

MODE OF INFECTION.

In all infectious diseases bacteria enter the blood and pass out through the kidneys. If they are few and are not especially virulent no infection takes place, but if they are abundant, attached to debris which has become separated from the purulent focus in which they have their origin and they are of virulent strain, and one or both kidneys is injured or diseased, and there is a concomitant obstruction to the free exit of urine from the kidney, either temporary or permanent, along the ureter or within its walls, or within the bladder or in the urethra, there will surely result a renal infection which may cause a severe and overwhelming toxemia and rapid death, or a slow infection with or without suppuration.

The required elements for the production of renal infections having a hemic source are the presence of pus-producing organisms and a lowered local resistance in one kidney. The first is supplied by a focus of infection always, the second by a traumatic injury to the kidney, the presence in it or its pelvis of a stone, the alteration of its tissues by a previous nephritis, stasis in its circulation due to displacement, hydronephrosis, pressure upon or stricture of the ureter, displacement or sagging of the walls of the bladder, stricture, or some other obstruction to the free exit of urine from the urethra.

The microorganisms circulating in the blood furnish the agent, the stasis of the urinary stream furnishes the opportunity, and the alterations of the kidney structure caused by disease or by trauma furnish the open door for the occasioning of the infection.

An infection of the kidney or the bladder may be esteemed as hemic in its origin when no evidence can be elicited that at any time an instrument has been introduced into the bladder or that a communication has been established between the intestine and the pelvis of the kidney or the bladder, by ulceration. It requires more than atony or paralysis of the vesical sphincters to produce an infection of the bladder mucosa. If it appears that a catheter or a cystoscope or a sound has been passed into the bladder without an accurate microscopic examination of the urine made beforehand to ascertain whether it was normal or infected urine, it may be very difficult to say with certainty whether the presence of pus-producing organisms in the urine is due to their entrance with the instrument or to their output from the general circulation.

Animal experiments and clinical experience all go to indicate that ascending infections from the bladder are very rare and difficult to produce, and often in those cases in which the ascending infection would seem to be most plausible, careful post-

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mortem examination will show that even in the presence of atony of the ureteral muscles within the wall of the bladder, that while a pyelitis or a pyelonephritis exists the inflammatory process has progressed only a portion of the way up the ureter, showing very conclusively that the infective agent was carried either through the lymph channels along the ureter, or had been swept directly into the blood stream and deposited in the kidney itself.

Debris-bearing microorganisms usually find a lodgment in the glomeruli which accounts very well for the frequency of abscesses near the surface of the kidney in hemic infections. These minute abscesses enlarge and eventually many form one and the infection passes on to the pelvis of the kidney, either by the pus breaking directly into it or draining down indirectly by way of the tubules.

Hemic kidney infections are all accompanied by pyuria. Sometimes the process is localized in the pelvis of the kidney,—a pyelitis; or there may be disseminated multiple abscesses in the cortex or the medullary portion of the kidney,—pyonephrosis: a condition much more serious,—frequently the result of, or accompanying a pyemia;—or there may be regional abscesses situated in one pole only which tend to point to the pelvis of the kidney and to drain through it,—the seriousness of which depends upon their extent and the virulence of the infective agent.

Quite another form of hemic infection is a pure hemorrhagic nephritis such as is seen in impetigo in children and is probably caused by the toxins of the staphylococci present in the lesions. A like condition occasionally occurs in influenza and this is more persistent and more dangerous.

Still another form of infection which has been reported by Ekkehorn is an aureus staphylococcic mycosis occupying a portion of the kidney only,—a granuloma showing granulation tissue, connective tissue and miliary abscesses.

The microorganisms which have been known to cause hemic infection of the kidney and the urinary tract are, in the order of their frequency:—colon bacilli, tubercle bacilli, staphylococci (usually aureus or pyocyanus), streptococci, gonococci, proteus. Hauser, typhoid bacilli, paratyphoid bacilli and pneumococci.

DIAGNOSIS.

Infection by the bacilli of Koch producing tuberculosis of the kidney will be considered by itself later in the paper as will also the coli bacillus infections. These infections are simple metastases,—they occur with great rapidity, are usually very acute and very persistent, and are most likely to lead to formation of multiple abscesses in the kidney tissue and often destroy the kidney and not infrequently the life of the patient very rapidly.

In their early diagnosis one has to depend more upon exclusion than upon direct symptoms. The symptoms present are essentially abdominal and frequently they may indicate just as well appendicitis, cholecystitis, malaria, intestinal disturbances, abscesses of the liver, toxemia of pregnancy or

acute or chronic nephritis as hemic infection of the kidney.

The most prominent symptom in kidney suppuration in addition to fever, is marked tenderness at the costovertebral angle, which is always present. There is continued or remittent fever according to the agent of the infection. The urine does not always give the clue to the microorganism at fault. If the case is advanced or serious the urine from the affected kidney will contain leucocytes or pus and there will be a leukocytosis up to, but not usually over, 25,000. A severe chill usually means a high grade of infection. Where the pelvis of the kidney alone is infected there is fever, chill, local tenderness both with and without pressure, and from the beginning the urine obtained by a ureteral catheter will show the presence of pus and pus-producing organisms, the nature of which can easily be ascertained by culture upon appropriate media.

Acute attacks of staphylococcic and streptococcic nephritis are most frequent. They have been observed following boils, tonsillitis, acute osteomyelitis, quinsy, paronychia, ulceration about the rectum, and contagious impetigo.

In the various hemic infections other than that of colon bacillus, in the urine obtained by a ureteral catheter we often find renal casts, and always numerous epithelial cells, from the pelvis of the kidney and the tubules. These organisms being urea-splitting ones cause a more intense irritation of the mucous lining of the secretory portions of the kidney and a more rapid shedding of the superficial epithelial layers. There is no question but what the triple phosphates in these cases deposited upon debris is one of the most potent causes of the origin of calculi within the kidney or the kidney pelvis.

TREATMENT OF RENAL SUPPURATIONS.

These infections divide themselves naturally into three classes,—those that cure themselves under an abundant use of pure water plus vaccines, diet, rest, urotropin, citrate of potassium, and mild diuretics like the fluid extract of corn silk. Second, those which require incision and decapsulation where the kidney is the seat of multiple superficial bacterial infarcts and abscesses. After decapsulation we should open all the abscesses that can be seen and drain the wound. The centers of infection are usually small and widely scattered. It is not well to simply incise the kidney without decapsulation. If the abscesses are plainly superficial and not too many, even if they be of considerable size, after decapsulation, recoveries have been known to take place when they were opened and drained. Third, malignant or explosive types, characterized by great depression and marked toxemia. If the condition is unilateral, as it usually is, nephrectomy is the only remedy,—this the experience of Brewer very well establishes.

Where the infection is chiefly of the pelvis of the kidney, drainage by the ureteral catheter and irrigation with mild solutions of oxycyanide of

mercury, 1/10,000, or nitrate of silver 1/20,000 to 1/10,000, are of decided value, when combined with rest in bed and hot applications over the kidney continued until relief and cure come. In nursing children infections mild in form are frequent. If the urine is acid an alkaline therapy is indicated,—best accomplished by the free use of bicarbonate of soda, citrate of potassium and Vichy water.

In either pyelitis or nephro-pyelitis, any obstruction to the free exit of urine must be removed before a cure can be expected. The cause must be searched for and when found the appropriate remedy used. Strictures of the urethra or of the ureter must be dilated. If the kidney is out of place it must be straightened up. If there is a hydro-nephrosis, permanent or intermittent, either a plastic operation or a nephrectomy will be necessary. If a stone is present no cure of the kidney condition may be expected until it is removed.

COLON BACILLUS INFECTION.

Colon bacillus infection is much more frequent than any other form of hemic infection of the kidney. Its symptoms are nausea, chill, high fever to 106° Fahrenheit, and pain in the costo-vertebral angle on one or both sides. The onset is often accompanied by the presence of blood in the urine; in the absence of blood there is albumen without casts unless infection has taken place in a kidney previously the seat of nephritis. The hematuria is usually brief but not infrequently its duration will be weeks or months.

Hemic colon bacillus infections are extremely obstinate and never disappear permanently until after the removal of the original focus in the abdominal cavity. The attacks recur at uncertain intervals and frequently are accompanied by great pain in the kidney and a most distressing dysuria, and are often very destructive to the kidney, and may be fatal, either through an acute pyelonephritis or by a chronic toxemia giving rise to destruction of rest and interference with nutrition. In cases that have received proper treatment it is not easy to tell always whether a subsequent attack is a fresh infection or whether due to a few colonies which, having escaped destruction in the kidney pelvis, have multiplied and caused a relapse.

Urine containing colon bacilli is practically always acid. It is easily distinguished from that containing other infective micro-organisms, with the exception of proteus hauser, by its remaining turbid on standing because the motile power of the bacilli keep them moving instead of sinking to the bottom as do other microorganisms.

The diagnosis between colon bacillus infection and proteus hauser is easily made by the odor of the urine and by its reaction to litmus paper; that containing colon bacillus has a putrid, fecal odor while that of proteus hauser has an ammoniacal odor and also an alkaline reaction, this latter microbe being one of the urea-splitting bacteria. In examining colon bacillus urine microscopically, one finds in addition to the clouds of rapidly moving organisms few or many pus cells and the

usual epithelial cells, whereas in proteus hauser one finds also triple phosphate crystals. The absence of crystals of uric acid is common in colon bacillus infection for the colon bacillus is inflicted with uric acid hunger attacking crystals or concretions of uric acid wherever it can find them. This infection frequently is preceded or accompanied by acute inflammatory infective processes within the abdominal cavity,—often appendicitis.

The symptoms almost invariably consist of a cysto-pyelitis with characteristic exacerbations and remissions and a peculiar fever curve, without a clear history of infection. There is always pain and tenderness over one or both kidneys with a cloudy acid urine showing microscopically motile bacilli and pus.

The first symptoms are often those of a light cystitis. Its appearance is a cheat for the real infection is of the kidney. The pain in some of these cases is atrocious, the urinary frequency so great as to require suprapubic cystotomy and in two cases I have seen this gave no relief, the patient dying in intense agony and with continuous vesical tenesmus.

ETIOLOGY OF COLON BACILLUS INFECTION.

Chronic obstipation certainly has a causative influence in the production of colipyelitis. We have seen several cases among elderly women in our practice where the removal of fecal impactions from the colon by great doses of black draught and high colon flushes were followed immediately by an abatement of the distressing symptoms, and the tide of colon bacilli rose and fell in the urine according to the neglect or care that was bestowed upon the bowels. Nearly all cases of bacilluria with pyelitis in children are preceded and accompanied by obstinate constipation and inflammatory infection of the gut at some point.

Anatomists tell us there is an anastomosis of lymph vessels between the ascending colon and cecum and the right kidney, and the descending mesocolon and the left kidney, which may help to explain the frequency of colipyelitis, for colon bacilli are always present in the bowel and some small injury to the mucous membrane gives the open door for their entrance to the lymph channels or blood vessels and a slight hurt to the kidney gives the opportunity for their colonizing in it and for their fixation there.

Unless the strain is a virulent one or the colonies are large they are very apt to pass through into the urinary stream and on into the bladder, if the kidney is healthy. The number and character of the bacilli depend upon the original culture and the character of the intestinal inflammation. If there is no lesion of the kidney and no obstruction to the urinary stream there will be no pyelitis, for animal experiments have frequently shown that the injection of colon bacilli into the blood will cause a bacilluria but gives rise to no inflammation of a kidney which is entirely sound; but if the colon is obstructed for twenty-four hours and the kidney is traumatized, or a stone is present in it or in the ureter, or the ureter is ob-

structed,—a colipylitis or pyelonephritis always follows.

COLON BACILLUS INFECTION.

Treatment.

Some cases are entirely susceptible to medical treatment alone which should consist of large doses of salol; plenty of distilled water to flush the kidneys; rest in bed; a restricted diet; and hot applications over the painful kidney. More serious ones will frequently yield to lavage of the pelvis of the affected kidney, in addition to the medical measures; but in a considerable number the colon bacillus will not disappear from the urine without a prolonged drainage of the entire urinary system by a retention catheter placed in the bladder. It is difficult often to carry this treatment out because we are not always successful in impressing the patient with the seriousness of his malady, and he, often not having the time or the money, just as soon as relieved of the pain, the nausea, and the fever, wants to get about his business. Then the vesical tenesmus in some of these cases is as intense as that observed so often in tuberculosis of the bladder, rendering it impossible to use a retention catheter.

It is marvelous to witness the relief at times afforded by ureteral catheterization and pelvic lavage. It is more particularly striking where a hydronephrosis exists.

The drugs we have found most useful for this lavage are nitrate of silver, aluminum acetate and oxycyanide of mercury; the former in a strength of from 1/20,000 to 1/10,000, which is quite as efficient as stronger solutions and does not occasion disagreeable kidney colic; the aluminum acetate in a 2% solution and the oxycyanide of mercury, 1/10,000 to 1/5,000. The lavage should be repeated once in five days. If the disease is confined to one kidney the ureteral catheter may lie in the kidney pelvis for several days.

Colon bacillus infection is quite a common disease among children. The majority of cases with them will yield to an alkaline treatment and sweat baths. The best agents for rendering the urine alkaline are citrate of potassium and Vichy water; the hexamethylin preparations,—myrmitol, helmitol, hexal, and urotropin, when used with sodium benzoate, are also of benefit.

Vaccines are very serviceable in colon bacillus infections,—more particularly autogenous vaccines. By their rational use it is quite possible to bring about the disappearance of pus and albumin from the urine and banish the fever, but without the other measures which I have mentioned, they do not cause a disappearance of the microbes.

The following table taken from Ove Wolfe, who conducted the experiments for Rovzing with the use of auto vaccines in colon bacillus infection, is a striking proof of their worth:

Of 38 vaccinated—

| before treatment: | after treatment |
|-------------------|-----------------|
| albumin in 79% | albumin in 16% |
| pus in 73% | pus in 24% |
| bacilli in 100% | bacilli in 76% |

Of 40 non-vaccinated—

| before treatment: | after treatment |
|-------------------|-----------------|
| albumin in 73% | albumin in 50% |
| pus in 100% | pus in 70% |
| bacilli in 100% | bacilli in 75% |

We have found in our practice that his conclusions are justified. I would not care to treat serious cases of colon bacillus infection without these vaccines.

The vaccines have to be used with great caution. An over-dose is often followed by violent reaction with severe constitutional symptoms and aggravation of local conditions. I have one patient who easily takes a dose of 1,000 millions and I have another who at no time has been able to take a dose greater than 50 millions. Several times when we have tried to rise above this dose the site of the injection has become inflamed, tense, excessively painful and to all appearances suppuration seemed about to take place, chill, high fever, intense pain in the muscles of the back, headache, nausea, and great mental depression followed. The vaccines have appeared to do best for us when given at intervals of four days. If for any reason one is obliged to omit the treatment for a longer period than ten days, it is wise to return to the initial dose of from ten to twenty-five millions.

The treatment of multiple abscesses occasioned by this infection, or for grave pyelitis or pyelonephritis that do not yield to general medical treatment plus drainage, or where the cases are explosive and confined to one kidney, is the same as that which we have advocated for grave renal suppurations arising from the other infective organisms.

PYELITIS GRAVIDARUM.

Pyelitis gravidarum may be considered with colon infections. Pyelitis in pregnant women is a disease of great gravity. In 70 per cent. of the cases a colon bacillus is the infecting organism. It frequently attacks the kidney structures and destroys them, and is often complicated by the formation of stones. With the pressure upon the ureter occasioned by the drag of the gravid uterus upon the bladder there exists a certain atony of the muscles of the ureter, and the possibility of an ascending colon bacillus infection is greater under these circumstances than under any other that we know, for there are present all of the elements favorable to it: increased intravesical pressure, pathology of the ureteral mouths and the possibility of retrograde peristalsis in the presence of motile bacilli. Against this are the observations of Widal and Bernard, who in two cases of pyelonephritis of pregnancy succeeded in isolating colon bacilli from the blood stream of the same strain as that present in the urine; and agglutination experiments have been successful in showing colon bacilli cultivated directly from the blood in septicemia, the serum in one case did not affect the others, but that from a case of gall bladder infection did.

The attack is usually not sudden in its appearance, a bacteruria often exists for weeks or for months, and it is probable that in many instances a pyelitis in a mild form has existed since child-

hood, since colon bacillus infection of the kidney is very chronic and is often seen in female children. There is little if any difference in a pyelitis occasioned by the colon bacillus and that arising from other infective organisms, nor is it possible always to differentiate between a pyelitis and a pyelonephritis, for casts and tubal epithelia may be present in the urine in both from a previous nephritis existing independent of the pus infection.

The initial symptoms will sometimes resemble pneumonia, the pain in the side being close to the diaphragm causes interference with respiration and cough, but never expectoration. Persistent nausea and vomiting in the later months of gestation are very suspicious, especially when accompanied by intermittent pyuria. It is entirely different from the vomiting of the early months of pregnancy. Whenever in a gravid woman fever occurs, the cause for which is not exactly plain, and there is even very slight pain on pressure at the costo-vertebral angle on one side, it is well to suspect colon bacillus infection of the kidney pelvis as the trouble present, and search for it in the urine obtained by ureteral catheterization. In these cases there may or may not be a leukocytosis. If there is, it is never very high.

TREATMENT

An attention to the prodromes, ureteral catheterization and lavage will often abort an attack. Rest in bed, a milk diet, and diuresis are necessary. If the child has a right lateral position, have the woman lie upon the left side and vice versa. Salol should be given in large doses. If these simple measures do not succeed, ureteral catheterization with lavage often will. The use of autogenous vaccines and, in persistent cases, a retained ureteral catheter should be tried. If the febrile symptoms do not then abate or the vomiting cease, we must choose between induced labor or a surgical operation upon the kidney, which should be nephrotomy or nephrectomy according to the condition of the affected kidney as indicated by the functional tests and by its appearance and feel at the time of operation. The prognosis is usually good for the mother as to saving her life but not good as to the production of a permanent cure without surgical interference. It is always bad for the child.

We should advise in general, induction of premature labor, unless some special indications exist for not doing so, because the symptoms usually disappear very rapidly after the emptying of the uterus. If they do not, then nephrotomy or nephrectomy is to be resorted to.

If nephrotomy is done the kidney should be sewed to the edge of the wound in the lumbar muscles and a soft pure rubber drain introduced into its pelvis and the kidney irrigated through and through by means of a ureteral catheter every two or three days with a solution of nitrate of silver, oxycyanide of mercury or 2% aluminum acetate.

A pyelitis due to any one of the infective organisms should be treated the same way. In cases

of multiple abscesses, pyonephrosis, it is sufficient and better to do a nephrectomy primarily.

TUBERCULOSIS.

Renal tuberculosis is a progressive infection, slow in its development, often remittent and probably incurable by medical means, due to the deposit of the bacillus of Koch within the tissues of the kidney by the blood stream and perhaps sometimes by way of the lymph channels. It presents different types:

First, the miliary form distinguished by the existence in the cortex of widely disseminated foci of granulation tissue containing tubercle bacilli; a complication of advanced pulmonary tuberculosis or a part of a general tuberculosis and having no diagnostic symptoms beyond the occasionally suspicious occurrence of renal hemorrhage or albuminuria and infiltration and irritation of the mucous membrane about the mouth of the ureters.

Second, there exists a chronic parenchymatous nephritis with abundant albuminuria, scanty urine and dropsical effusions without cardiac hypertrophy and without increased arterial pressure. This occurs occasionally in the later stages of pulmonary tuberculosis and is of rapid development, the urine is irritating to the trigone, the bacillus cannot often be found but guinea pig inoculations are usually positive.

Third, it is claimed by some writers that there exists a tubercular interstitial nephritis.

Fourth, and most important, is the form characterized by a slow infiltration of the parenchyma with minute foci of infection which tend to join with each other forming circumscribed nodules or masses that soften or ulcerate and undergo caseous degeneration. Fortunately this process is at the beginning almost invariably unilateral, and occurs as a rule in persons who are not affected with active tuberculosis, but have lesions that appear to be cured, or present no evidence of tuberculosis. This is at the same time the most hopeful and the least hopeful of tuberculous changes in the kidney, and is the one usually meant when renal tuberculosis is spoken of.

SYMPTOMS.

At its commencement there is no symptom or group of symptoms that is diagnostic. The first of all is vesical irritability soon followed by the appearance of albumin in the urine and perhaps hematuria. The cystalgia is apt to be disregarded for a long time, the albumin to remain undiscovered until a free renal hemorrhage alarms the victim and sends him to the physician. Even then most generally the significance of the syndrome is not understood. Renal stone is a rare disease, renal tuberculosis a common one, yet the average consultant will search diligently for the calculus that is not there and forget all about the tuberculosis that is. The presence of pus in the urine is not long delayed and with it the agent of the process, the bacillus of Koch, appears.

It is important that the exact significance of this picture should be appreciated by every physician. Be suspicious of every case of prolonged

vesical irritability the origin of which is not entirely clear, for therein a renal tuberculosis may be ambushed,—a chronic infection, slow in its development, progressive, involving finally the entire urinary system, and mercilessly fatal,—more important by reason of the fact that from its anatomical peculiarity early skilful surgical aid will affect a permanent cure of more than 50% of the cases.

MODE OF INFECTION.

How does the bacillus invade the kidney? By the blood stream in all but the rarest of instances; the process is exactly the same as that which takes place in the other hemic infections. Where open tuberculosis, patent to the dullest clinician, active pulmonary lesions, joint or bone affections, or degenerations of the genital organs are present, the source of infection is so plain that no mistake can be made. Much more often a nidus of walled-in bacilli, the remnant of an infection of childhood, unheeded or unsuspected, exists in the glands of the mediastinum or the neck and under the depressing influence of trauma, acute inflammatory disease of neighboring parts, or impoverishment of blood following vigil, or overwork or overplay in vitiated air, softening of the caseated gland takes place discharging sparse bacilli into the blood stream attached to tiny fat drops or tissue shreds, minute emboli, that are of such low vitality that when arrested in the capillaries of an injured or diseased kidney they colonize slowly and without vigor, producing a form of renal tuberculosis which is from the onset essentially chronic, the clinical form which is the most important,—that now under consideration,—unilateral, nodular, caseating renal tuberculosis.

Why tuberculosis of any of the paired organs should almost invariably at the start be unilateral is difficult to explain, but it is a clinical condition of universal observation and this form of tuberculosis of the kidney is no exception to the rule, fully 85% of the cases are unilateral at the outset. It is this very anatomical peculiarity which renders them very hopeful subjects for surgical therapeutics. If given time enough for development each one of these cases will eventually become bilateral infections and when they do it is too late to consider a cure by surgical interference. How long a time does it take? This varies with the virulence of the infection and the resistance of the patient. When it does occur are the bacilli derived from the original nest from which the first kidney was infected or is their source the diseased kidney itself? The researches of Israel upon the frequency or banality of infection of the remaining kidney after nephrectomy for this disease give the answer of this question, for they show conclusively that the presence of a tuberculous kidney in the body of a person predisposed to tuberculosis is a greater danger to its healthy fellow than the presence of infective foci elsewhere.

It is interesting to watch these cases year after year where operation is refused. The great ma-

jority of them present an infection of the second kidney within three years and only about 20 per cent. of them live beyond the fifth year. In a few the disease appears for a long time to be really benign, the hemorrhages cease, the urine clears up, the vesical symptoms ameliorate and almost or entirely disappear, there is no inconvenience, the cystoscopic picture becomes almost normal, no tubercle bacilli can be found, and even the guinea-pig test may be negative. This apparent cure is not accomplished at once but slowly, and to any agent that may have been administered, or to any medical cult that may have been employed, a cure is credited. But, alas, these cures are but frauds, they do not exist; it is only the segregation of the infected focus that has taken place, firmly walled off from the sound kidney structures by inflammatory tissue which for the time being is sufficient barrier to their extension, and cut off from the urinary stream by the automatic ligation of the calyx or calyces of the diseased portions of the kidney, or perhaps the sidetracking of the entire kidney by the stenosis of its ureter, the bacilli sleep peacefully in their cheesy storehouse until constitutional disease or trauma or renewed activity once more liberates them. However long the interval of inactivity may be, the postmortem table never shows these cases as cured. Once started, the disease is subject to many remissions but never disappears. The pity is that when we encounter a case there is no way to tell whether its progress will be slow or rapid; we only know that, left to itself, it in time will be fatal.

The kidney does not present, upon section, the same appearance in all of these cases, but one is always impressed by the pathology of their incurability. Occasionally one finds calcified lesions, but always with active nodules beside them; just as rare are perfect cicatrices indicating fibroid healing of a nodule, for beside or within them active foci can be found. The whole kidney, or one pole, becoming a cheesy cavern, often breaks down and is discharged through the ureter; but its walls, filled with purulent urine, are always covered with tuberculous granulations. Even the clear contents of the cysts found in excluded kidneys is fatal to guinea pigs.

Of all the chronic infections to which the human body is subject, tuberculosis is the most kind. Judging from the experience of the operating-room and the section-room and the medical clinic, the enormous majority of those attacked by tuberculosis of the lungs, bones, lymph glands, skin, etc., get well. Then why does not the kidney recover? Perhaps it does in the miliary forms and in tuberculous nephritis, but not in the caseous forms. There are two plausible reasons for this: the first is the universal tendency to destruction of the kidney tissue by the caseous degeneration, and the other the continued interference with the circulation of the organ and the retention in it of the urine loaded with tubercle bacilli, caused by the infection of the walls of the ureter and its obstruction by the inflammatory processes engendered thereby.

DIAGNOSIS.

The recognition of the disease and its diagnosis is easy to the instructed. The disease is a very common one, and yet the medical profession in general never recognizes more than one out of five of these cases until the kidney is practically destroyed. In addition to the existence of vesical irritability, pus, tubercle bacilli, and perhaps blood will be found in the urine obtained by a sterile ureteral catheter directly from the pelvis of a kidney suspected to be the seat of this disease. The patient should always have been supplied with a liberal quantity of water for a period of at least two hours before the catheterization, and the urine should be collected for at least one hour. If acid-fast bacilli are not found or very few of them are found, or only spores are found after prolonged centrifugal sedimentation at a very high speed, the sediment should be injected into a guinea pig for the animal test, or the complement fixation test of Debré and Paraf, which consists of the demonstration of a tuberculous antigene in the urine, should be applied.

To an expert in cystoscopy the diagnosis may be surmised with almost positive certainty from the presence of a peculiar injected appearance of the mucous membrane of the trigone, which looks as if finely powdered paprika were blown with great force into it. There is also edema and not infrequently ulceration of the mucous membrane within and about the trigone and at the vesical neck. There is no distinct diagnostic appearance of the ureteral meatus, for this may be concealed in a mass of granulation tissue, deformed and constricted by ulceration, or open like a golf hole, or only slightly puffed by the irritation of the bacilli. The chromogenetic functional tests aid only in determining the secretory capacity of the kidney without indicating the cause of its depressed function.

If the edema or ulceration of the trigone or stenosis of the ureter makes it impossible to catheterize the ureters, exploratory examination of each kidney should be made to determine which is the diseased one. We cannot be too strongly reminded of the fact that we must distrust the evidences of a tumor of the loin discovered by palpation when we are seeking the diseased kidney. The mass may be only a hypertrophied healthy kidney or it may be the only functioning one, and also not free from disease. Each kidney should be brought from its bed upon the loin, and its entire surface, and more particularly its pelvis and its ureter, viewed and palpated for pathological changes. A diseased ureter will be thickened and adherent. The fatty capsule about a diseased kidney will be adherent in places to the true capsule, sometimes so intimately associated with it that it is impossible to separate them. In case of doubt it may be necessary to open both ureters some distance from the kidney and obtain a specimen of urine from them for microscopical examination before deciding which kidney is the diseased one.

Having made our diagnosis and ascertained the prognosis in the special case, what are we to rec-

ommend to our client? There are but two ways of treating him. He must either have the general treatment for tuberculosis; climatic and hygienic measures combined with diet, drugs of the creosote class and tuberculin, or we must subject him to surgical exclusion of the diseased kidney, nephrectomy. The combined work of many skilled urological surgeons in all parts of the world during the past ten years has demonstrated that the only way to cure a kidney affected with unilateral nodular, caseous tuberculosis is nephrectomy. It results in the immediate relief of 75 per cent. of the cases and in the permanent cure of 50 per cent. of them—the immediate mortality should not exceed 6 per cent. and is for some operators as low as 1 per cent. The natural history of the disease shows that, though remissions are many, the progress is always relentless, eventually ending in death; but before the advent of the lethal day the diseased kidney invariably infects its fellow, and when the patient does not go out by reason of his renal tuberculosis, he dies of tuberculosis of other organs. All honor to our dead colleague Albarran, whose work has made such surgery possible! If the disease is far advanced and both kidneys are tuberculous, if one shows great distress and the other shows sufficient functional capacity to carry the burden of life, the less normal one should be removed. This operation is, of course, palliative, for death in these cases usually takes place in the first year after operation.

Nephrotomy is not curative and should only be resorted to in distinctly suppurating cases, especially when the process has become perinephritic and where the general condition of the patient will be improved by temporary drainage awaiting a nephrectomy, to be done as soon as it is safe.

In the last twenty years I have nephrectomized quite a large number of patients for unilateral, nodular, caseous renal tuberculosis with a very low percentage of immediate mortality and a very high percentage of prolonged cure. I have not had the time to segregate these cases from my history sheets. I know, however, that very few of them have been early cases; for every one that has come to operation at least three have refused the relief afforded thereby. It is difficult to impress the sick man and his friends with the seriousness of his condition and to instil into him the belief that he can be cured by nephrectomy. I find that it is not the explanation of the percentage of permanent cure resulting from the removal of the diseased kidney that moves many to submit to nephrectomy, but it is the atrocious and almost continual pain in the bladder that drives him to it in desperation, and most usually the early stage has passed when this occurs. Again we very often have had the opposition of the medical advisor in these cases, for a large percentage of the older practitioners of medicine are skeptical about the existence of renal tuberculosis, or are fearful of the results of operation, or believe that the patient can be cured by medical means.

I am not so sure that an immediate mortality of from 1 to 6 per cent. would obtain if the work of

the unskilled and infrequent operators was grouped with that of the skilled and frequent. I have removed many more than one hundred kidneys for various surgical diseases, and I can not be made to believe by any one that the operation is an easy one without danger.

While I know that medical treatment is not curative of this condition of chronic nodular, caseous renal tuberculosis, the natural history of the disease, coupled with the reluctance of the average person to submit to the mutilation involved in the removal of a kidney, induces me always to delay for a while with medical treatment until severe renal pain, persistent hemorrhage, attacks of colic, aggravated cystitis, progressive loss of weight or the rapid fall of the functional capacity of the kidney tell me that it is surely time to interfere. I have not yet seen any cures that I could attest as such resulting from a reasonable medical treatment—a cure in which the urine had become without pus and without bacilli, the bladder symptoms both symptomatically and by the cystoscope abated, pig inoculations negative, and the ureteral catheter demonstrating a kidney which had been diseased producing a normal urine.

To prevent disappointment it is best to look upon tuberculin as of assistance in the treatment of tuberculosis of the kidney and not as a specific remedy therefor. In forming an opinion of its value we must use as a base the reports of those who have had the patience to use it, over long periods of time, upon numerous cases that have answered to the requirements of a perfect diagnosis: the direct demonstration of tubercle bacilli in an acid purulent urine received in a sterile container from a sterile ureteral catheter introduced into the pelvis of the kidney of a person afflicted with polyuria, dysuria, or both, or the development in a guinea pig inoculated with the sediment of this urine, of tuberculosis at the point of inoculation.

The evidence of experienced operating surgeons who have frequently nephrectomized such patients with a low mortality both immediate and remote, yet who have had the courage to thoroughly test out the merits of tuberculin, is the best evidence of all, for they know and appreciate better than others the unreliable history of the disease and its unaccountable vagaries—how the individual develops a marked resistance to re-infection both from within and without, accounting for the slow progress of renal tuberculosis, its remissions of disturbing symptoms, and sometimes of apparent cure for months and for years, by the encapsulation and sealing up of the abscess cavity, thus introducing an element of doubt always into the origin of any favorable results following the use of tuberculin in these cases.

Thus the use of tuberculin as a remedy in tuberculosis of the kidney can never be other than empirical. Many of those who have sung the praises of its curative powers have not always been very careful to make sure that their cases were actually tuberculosis of the kidney to start with, and were satisfied to report a cure when their patients increased in weight and the vesical symptoms

decreased in intensity. There is no case on record that I have been able to find that answers the full requirements of a cure of tuberculosis of the kidney by tuberculin, and yet there are many intelligent urological surgeons who believe that it is possible if the disease is recognized early that it may be cured by hygienic and climatic measures if aided by tuberculin, and all agree that it is at least a useful placebo in bilateral renal tuberculosis, and in those cases where one kidney having been removed the remaining one is attacked by the bacillus. Speaking for ourselves, though we are firmly convinced that in unilateral nodular caseous tuberculosis of the kidney, in the presence of a sound companion kidney and without the existence of any other contra-indication thereto, nephrectomy is the only remedy that promises a permanent cure, we have found it very difficult to convince the sick man and his friends of the benignancy of the operation in skilled hands and the necessity therefor, and so we have been compelled to treat a number of such cases against our judgment as what was best, by tuberculin, duotal and hygienic measures. The clinical results in a few instances have been astonishing and in many fairly satisfactory, and were it not for the inexorable average history of unilateral nodular caseous tuberculosis of the kidney, did we not know that the walled-in abscess may contain living bacilli that hibernate for years only to be released by some mechanical insult to the kidney or some lowered resistance giving rise to metastatic auto-infection again, we might well believe we had seen cures effected by tuberculin.

It is not a matter of much importance what particular preparation of tuberculin is used. The Belgians, and many of the French, use Deny's B. F. Other French investigators believe in the virtues of Spengler's I. K. In Germany and America Koch's O. T. and N. T. and B. E. are in most general use.

The dose, however, is not a matter of indifference. It should be small, always very small, at first. One that will equal 1/1,000,000 to 1/100,000 mg. of O. T. is always sufficient to start with and it should be raised very gradually, avoiding the occasioning of a local or general reaction. The intervals of its administration should be four or five days. Used in this way it helps many and injures none.

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THE OPERATION OF SUPRAPUBIC PROSTATECTOMY AND SOME OF ITS RESULTS.*

By MARTIN MOLONY, M. D., San Francisco.

Before deciding on the serious operation of suprapubic prostatectomy, an accurate diagnosis is of the first importance, the several points investigated indicating the operation and the probable results you may expect. The patient may want to know why it is necessary that he must have an operation; what will happen if he does not; what is the danger of the operation; and what is going to be his condition after the operation. In answering the first question, it will be necessary to enter briefly into the pathological conditions that may arise from enlargement of the prostate. During the course of this disease the growth of the prostate into the bladder raises up the bladder base, causing a hollow space behind it—the "post-prostatic pouch"; the bladder is trabeculated, hypertrophied, and later on dilated, sacculated or pouched. Profound changes take place in the upper urinary tract. The ureter and renal pelvis are often dilated to a very large size, with hydronephrosis and renal atrophy. You have also that very insidious condition of chronic interstitial nephritis, so common in prostatic obstruction, which increases the risk and aggravates the trouble. This long and complex urinary system, with its lowered resistance due to prolonged back pressure, is still further liable to infection from various micro-organisms introduced by passing a catheter or by the blood stream. Death is brought about by sudden renal infection and pyelonephritis, or by slow renal destruction from persistent back pressure, often unsuspected by the physician. It is not necessary that an extreme amount of back pressure should exist—a partial retention due to prostatic obstruction is sufficient to produce chronic

interstitial nephritis and other complications which hasten the patient's death.

The question of "catheter life": The dangers and difficulties that surround catheter life are many. The risk of infection and hemorrhage. It breaks down sooner or later and leaves the patient in a worse condition for a successful operation. The mortality is very high, some place it as high as 100%. The average duration of life is about three to four years. Squiers places it at two and one-half years. It is an established fact that you are not justified in recommending catheter life in cases suitable for operation. The delay increases the risk. It is only indicated when operation cannot be done.

The dangers from suprapubic prostatectomy are shock, hemorrhage, uremia, septicemia, bronchitis, pneumonia, thrombosis and embolism. Some of these causes are due to pre-operative diseases of the kidney and many of them can be avoided by adopting careful preventive treatment before operation.

It may interest you to quote the published statistics of some of the large London hospitals. In one of the largest, during a period of 10 years, there was a mortality of 35%. In four of the large London hospitals (St. Bartholomews, University, Westminster and Middlesex) the mortality for a period of four years—from 1906 to 1910—was 21.5%. Compare this with the results of St. Peter's Special Hospital for urinary diseases. Freyer's mortality for 1,036 operations was 5.5%. He began with a mortality of 10% in his first hundred, which he steadily decreased to 3% in his last hundred. I understand that later still he has a mortality of 3% for 300 operations. Sixty-five of these were octogenarians, eleven border line cases of 79 years of age. Thompson Walker, with whom I had the advantage of working at the same hospital, has a mortality of 5% for 112 cases. John Pardoe's results, I understand, are similar, also at the same hospital. These statistics do not give the real mortality of the operation as amongst the great number of general surgeons, and in the general hospitals all over the world. It is probably much higher, nor is it due to deficient technic as compared with the specialist.

The object of quoting these statistics is to bring to your notice that the mortality from this operation, as practiced in many general hospitals in recent years, does not show the reduction to be expected in an operation which today has justified itself. As one general surgeon states, "We see cases which, in the light of our present knowledge, seem eminently suitable for operation. The operation is simple, yet the patient dies from causes which appear to be unavoidable."

I have seen cases operated on successfully at St. Peter's Hospital, suffering from mitral and aortic disease, multiple sclerosis, renal diseases, old standing hemiplegia, and even some cases helplessly ill, almost moribund, are included. In many of these cases the results of a skilfully conducted prostatectomy are little short of miraculous.

Results after suprapubic prostatectomy. In order to understand the condition of a patient after

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prostatectomy, I will describe a few points in the anatomy of the prostate before and after the operation. The prostate enlarges, spreads out in two directions: backwards outside the bladder, pushing the vesicles before it and separating them from the bladder wall; upwards inside the circle of the sphincter muscle, which it gradually stretches more and more as it grows larger. In its growth upwards it forces its way through the trigone muscle at one or more points covered only by the mucous membrane of the bladder and posterior urethra. The internal orifice of the urethra is often large and funnel-shaped. The structures removed are the prostate and prostatic urethra. There are two varieties: one with an intra-vesical projection, the other wholly extra-vesical. The intra-vesical projection when present shows the deep groove of the sphincter of the bladder. You may have behind the opening of the internal orifice a median lobe, or on each side two lateral lobes, or one lateral lobe or a collar projection. On examining the prostate you will see the anterior commissure is complete, extending all the way down between the two lobes. The posterior commissure is complete down to the verumontanum and from this point downwards the lobes are separate, the posterior wall of the urethra being wanting. The anterior commissure may be split up and the lobes separate, opening out in front and united, hinged-like, behind. The two lobes are not separated histologically although physiologically distinct. You may have inflammation and abscess or malignant disease in the one lobe independent of the other.

In the operation the mucous membrane is easily scratched through, the line of cleavage is easily found. The finger sweeps around until the urethra is broken through; the blood vessels are out of the way and bleeding soon ceases. The prostatic bed as felt has a smooth lining and the internal sphincter ridge can be made out.

The cavity seen after the removal of the prostate between the bladder and the membranous urethra is roofed over by the trigone. The wall consists of the fascial sheath of the prostate. This is what prevents the urine from escaping into the surrounding tissues. The opening into the bladder is seen on the anterior portion of the roof; the vesicles are seen posterior and external to the capsule, pushed out of their original position beneath the bladder base. An overhanging ledge is formed by the trigone. The cavity contracts to a small size and remains for years afterwards.

Retention of Urine: In many cases of small and medium sized prostates the compressor urethræ at first acts, and later on during convalescence the sphincter vesicæ resumes its function, but in the majority of cases it is now known that the vesical sphincter remains rigid and dilated and does not resume its function. The compressor urethræ then acts as sphincter and retains the urine. The patient has complete control over his urine. Not one case of incontinence of urine has been known to occur in about 1,500 cases operated on at St. Peter's Hospital in London, except those rare cases in which organic nervous disease existed.

Cystitis. If cystitis is present before operation

it generally clears up with the free drainage provided and thorough washing out of the bladder during convalescence. Some rare cases persist. They may be due to extensive sacculation of the bladder or old standing pyelonephritis. Irrigation and vaccine treatment assist in curing some of these cases. If the infection is higher up in the kidneys, washing out the renal pelvis may improve some of them. Nephrectomy may be advisable if only one kidney is affected.

Calculi: In those cases where severe cystitis persists with the decomposition of urine, calculi frequently occur. When they do occur it is sometimes in the prostatic cavity and there is often difficulty in crushing them. They can be crushed with the lithotrite or removed by perineal section. The most frequent cause of the recurrence of stone after prostatectomy is shown to be due to the presence of severe cystitis.

Hernia of the suprapubic wound occurs rarely. It is often due to keeping the drainage tube too long in place. It may be caused by too large an incision. It is important to close the wound around the tube accurately.

Suprapubic fistula is also a very rare occurrence. It may be due to carelessness in the after treatment of cases with badly infected bladders and generally in very old people. Wrong technic in closing the wound around the drainage tube may cause it. The fistula can be cured by excision. In perineal prostatectomy the fistula is incurable.

Sexual function after suprapubic prostatectomy. As mentioned before, the posterior portion of the prostatic urethra with the verumontanum and ejaculatory ducts invariably remain behind after the prostate is removed. In rare cases some injury may be done. On examination of these cases per rectum you will find on palpation the vesicle swollen and tense, indicating some obstruction of the ejaculatory ducts. You will find this condition in only very few cases. Many of the patients are very old and their sexual functions have abated. Some suffer from extreme sexual irritation leading to excesses and often a perpetual torment to them. This sexual irritation disappears after operation. As a general rule if the patient is in good health his sexual powers are improved and ejaculation is normal. In those cases where erection is normal but there is no ejaculation, the semen is discharged into the cavity left by the removal of the prostate.

Hemorrhage. Secondary hemorrhage may occur a week or two after operation. If severe, it is treated by opening the wound, reinserting the tube and packing the prostatic cavity.

Remarks. With the exception of these cases mentioned above, the after results are very satisfactory. The one remarkable feature about these cases of suprapubic prostatectomy is the complete control the patient has over his urine, considering many of them may have been on catheter life for years. The patient's health and vigor improves to a remarkable degree.

I will give you a short history of a typical advanced case of enlargement of the prostate, before and after operation.

Patient aged 68 years; for five or six years had difficulty in passing his urine; got up three or four

times at night. Two months ago he had complete retention of urine, and was relieved by catheter. He had much difficulty in using his catheter. He had attacks of fever with chills. He suffered from thirst, dry tongue, and complained of being drowsy. He was rapidly wasting and anemic. I drew off 18 oz. of residual urine containing much pus.

On rectal examination, prostate was markedly enlarged, resilient, movable. Cystoscopy showed a prominent, bilateral, introvesical projection. The bladder was much pouched and trabeculated.

Operation: The prostate was removed by the suprapubic method, coming away complete in its capsule. There was little hemorrhage; the wound closed 27 days after. He called to see me recently and says he is in the best of health. He is 12 lbs. heavier than he has been for years. He says he retains his water as well as ever he did. He has no trouble whatever, and he says micturition is freer than it has been since his boyhood. This shows what excellent results can be obtained by suprapubic operation in advanced cases, suffering from back pressure and its complications.

It seems as if nature designed these parts for suprapubic prostatectomy. The main bulk of the gland is intravesical, covered only by a mucous membrane. The internal sphincter is dilated and pushed out of the way of injury. The line of cleavage between the false capsule and the sheath is provided. The ejaculatory ducts are pushed away to a region of safety and separated off by the thick-walled false capsule. The large blood sinuses lying between the sheath and the false capsules are protected by the latter. The external sphincter is also safe from any damage. One of the most satisfactory features of the operation is that the patient as a rule states after the elapse of months or years that he feels from ten to twenty years younger than he did before the operation. It is a fact that few major operations in surgery give more satisfactory results or greater relief from untold suffering in old age with less risk than a successful suprapubic prostatectomy.

THE CARRIER PROBLEM IN DIPHTHERIA.*

By W. H. KELLOGG, M. D., San Francisco.

A comparatively recent development of sanitary science is the discovery that mild unrecognized cases and healthy carriers are a very important source of new infections. Carriers are persons who harbor within their bodies pathogenic bacteria, without suffering from the disease themselves. They may be carriers by reason of the fact that they have recently recovered from an infection and the bacteria still persist within them, or they may never have had the disease, but have acquired the organisms by association with other carriers or cases.

Diphtheria was the first disease in which carriers were recognized and it remains the particular disease in which carriers are of the most importance in its propagation. In fact when rigid isolation of cases is practiced, carriers are almost the sole means of spread.

The most modern teaching, and there are few who dispute it, is that diphtheria is spread almost

exclusively by personal contact. Fomites and room infection are things of the past; so also contagion through the medium of the air. The latter is a medium only so far as the zone of possible droplet infection extends around the person supplying the virus. It is therefore evident that the presence of diphtheria carriers in a community is of the utmost importance from the standpoint of prevention.

The problem is, how should they be handled by boards of health, and by practicing physicians.

It is usually stated that about 1% of healthy persons in urban communities are diphtheria carriers. On this account some physicians are inclined to think that any work directed against the carrier is nonsense; that you can find diphtheria bacilli in almost any person's mouth. But this is a wrong position to take, as I hope to make clear later. The reason one per cent. is found in urban communities is that cases are always present and cases are always present because carriers are always present. It is an endless chain. When, by reason of a suitable chain of circumstances, in a community small enough to make this possible, the infection disappears entirely, no further cases appear nor are there any carriers present until the infection is re-introduced from without. This has been proven by bacteriological examinations of numbers of people in communities that have been free from the disease for two or three years.

On the other hand, in neighborhoods and schools where there is an unusual prevalence of the disease, carriers are always found and in much higher percentage than the usual 1%. We have recently had quite an extensive experience in searching for carriers, in the Laboratory of the Health Department of this City.

A total of 3,113 children have been examined during the past 60 days and some interesting observations noted. In one large school, that was not particularly under suspicion except that it was located in the part of the City where the disease was prevalent, only a little over 1% of the pupils were found to harbor the diphtheria bacillus.

Another large school in the district of greatest prevalence of cases, was found to contain over 7% of carriers. A small school in the outskirts of the city had 25% of carriers, the teacher being one of them. The percentage of carriers in the total number examined, was 3.62%.

The percentage of positive results obtained in any particular instance will depend somewhat on what morphological characters are regarded by the bacteriologist as constituting a diphtheria bacillus. Personally, I have observed that well over 90% of the cultures obtained from clinically suspicious cases and when examined within 24 hours, conform, when stained by a differential method such as Neisser or Ponder's stain, to a certain well defined type, namely, the polar granules and faint staining of the intermediate portion of the rod. Therefore, in the diagnosis of carriers, I exclude the barred types and others of Wesbrook's classification. No attention whatever is paid to the pseudo-diphtheria bacillus of Hoffman or in fact of

* Read before the San Francisco County Medical Society, February 9, 1915.

anything that does not show the granules with the strongly acid stain.

The question of the virulence of the culture obtained from a carrier, is, I believe, of very minor importance. The determination of this point, when dealing with a large number of cases adds considerable work to the laboratory and, after it is done, it is a very grave question whether or not an avirulent strain may not under suitable conditions become aggressive and a toxin producer. Indeed several workers have claimed to have changed by cultural and inoculation methods, non virulent strains into fully virulent ones; and the contrary is also true. Virulent cultures can be attenuated by laboratory methods until they lose the power of toxin production. Parke and Williams believe that non virulent strains are true diphtheria bacilli that have become attenuated by natural means.

Among some of the observations we have recently made, bearing on the subject of carrier transmission are instances of which the following are samples: In two cases where carriers were excluded from school, diphtheria developed in other members of the family during their exclusion from school. In four instances, carriers, excluded from school, came down with diphtheria themselves. Another set of circumstances seems to point to the teachers and guardians of the children as the source of infection: Many cases of diphtheria having been traced to a day home for children, a search for carriers was made, with the result that two of the Catholic sisters in charge were found to be carriers in addition to about 15% of the pupils. From the fact that these two sisters have proven to be resistant to all means so far adopted to clear them up, it seems a reasonable supposition that they were the original sources of infection in that school.

The acquisition of diphtheria bacilli in their throats, on the part of our nurses of the school inspection department is a phase of the carrier problem that is giving considerable concern to their chiefs. The force is already inadequate and to have it cut down by the retirement of two members as carriers, which happened last week, seriously cripples the department.

The question of the carrier in diphtheria is treated in a somewhat contradictory manner by Chapin. He says: "It may be admitted that only 1% of the population are carriers—also that only 15% of these carry virulent germs, though it is really often much greater. It may also be admitted that these bacilli are not usually so numerous as in the sick, though it is known that they sometimes appear in pure cultures; yet even admitting all this, there will be in inter-epidemic periods in a city of 100,000 people at least 150 well persons carrying virulent diphtheria bacilli.

"Why should the bacteriologist ignore these 150 sources of infection and insist on two throat and nose negative cultures from every reported patient?

"Or why should he, as he occasionally does, recommend isolating the carriers in the family but ignore all other carriers?

"Why neglect this whole question of carriers, and spend endless time in devising methods of liberating formaldehyde to kill the few bacilli that may remain about the house?

"Why worry about the saliva that may have gotten onto a book, a coat, or the wall of a room, and neglect the reader of the book, the wearer of the coat and the dweller in the room, who is probably growing the germs in his throat and nose?"

And yet in spite of all this, the City of Providence, under Chapin's guidance, has abolished the requirement of negative cultures for the release of diphtheria cases, on the ground that there are so many more carriers abroad already that a few more will make no noticeable difference.

Strange to say it apparently does not make the difference that we would expect. The truth of the matter is that there are factors playing a part in the prevalence of infectious disease that we do not fully understand; otherwise we would not have those instances of subsidence of epidemics in the face of neglect of precautions by the authorities and of the spread of infections in spite of the most intelligent and vigorous opposition.

It is probable that in diphtheria, at least, the mild cases and the unknown carriers account for the seeming discrepancy noted by Chapin of the unimportance of examining convalescents and confining them if found to be carriers. Until we have found a way of rounding up and treating all carriers in the community we will always have diphtheria with us, and this is manifestly impossible when so many carriers exist.

The question of what can be done to clear up a carrier now presents itself. In my experience, it is a most discouraging thing. The use of sprays of cultures of staphylococcus has had the endorsement of some eminent men, but the reports are contradictory and on the whole not very encouraging. I have noticed that it apparently succeeds better in the hands of some physicians than of others and it may depend somewhat on whether the patient and family are depended on to apply the treatment or whether a nurse or the physician himself applies it. The cultures should be fresh 24-hour cultures in bouillon and should be applied three or four times a day.

We have produced and supplied to physicians in a number of instances, a vaccine consisting of a killed culture of the bacilli. The few cases in which it has been used cleared up but not so rapidly as to point to the vaccine as the undoubted cause.

Apparently the greatest evidence of benefit has been produced by the use of one part of tincture iodine to three or four parts of glycerine, applied on a swab to the tonsils and pharynx. We still have, however, some carriers on our list who are resisting this treatment.

In some cases, the only effective procedure is tonsillectomy; and where there exists the slightest excuse for the operation aside from the presence of bacilli, it should be performed, as it offers the best hope of a prompt clearing up of the case.

RETRODISPLACEMENT OF THE PREGNANT UTERUS.*

By LOUIS I. BREITSTEIN, B. S., M. D., San Francisco.

Instructor of Obstetrics in University California Medical School.

In presenting this subject I aim to emphasize certain indications that should lead to an early examination of pregnant women and the speedy abandonment of conservative treatment in dealing with those cases that show no tendency to right themselves.

I use the term retrodisplacement of the pregnant uterus as a common term, to include the varieties of pure retroversion, pure retroflexion, and a combination of the two; i. e., retroversion of a retroflexed uterus. Fully twenty-five per cent. of women in general have retrodisplacement of the uterus. Just what percentage of pregnant women suffer with this condition is impossible to state because the majority of women are not examined in the early months of pregnancy. I hold, contrary to the general opinion, that this condition is no bar to impregnation; whether the pregnancy is carried to full term is another question.

There are two views as to the cause of this condition. Retrodisplacement of the pregnant uterus in early pregnancy may arise *de novo*, due to the same causes that bring it about at other times; e. g., a fall, heavy lifting, coitus, carelessness in permitting the bladder to become over-filled, etc., or, pregnancy may start in a uterus already retrodisplaced. This latter is the most common cause.

The clinical features of such cases are best described by citing some cases that have occurred in my service at the University of California Hospital, Mount Zion Hospital, and in my private practice.

Case I. Mrs. W., age 27, last menstruated March 7th, 1912. Now gravid for the sixth time; five of her pregnancies terminated in abortions, all of which were induced. The second and third were followed by fever and great pain in the lower abdomen, which was evidently parametritis. She came to my office April 15th complaining of a dragging sensation in the pelvis, constipation that was becoming very obstinate, backache, nausea and vomiting that was making her very miserable. On examination I found a pregnant uterus that was so retrodisplaced and bound down by adhesions that it was impossible to correct the faulty position. I packed the posterior fornix rather lightly, however, and instructed the patient how to keep her bladder and rectum empty. After continuing this for three weeks I found that the uterus was becoming more movable and the use of the tampon was discontinued. At the eleventh week

of gestation the patient reported that all her symptoms were gradually disappearing. An examination at the end of the twelfth week revealed the fact that her uterus had righted itself and was ascending into the abdominal cavity.

This is only one of a large number of such cases. The rule is that spontaneous reposition will occur in the absence of any severe complication. This case was complicated by adhesions but the uterus replaced itself nevertheless, either by the adhesions softening and permitting stretching, or by disappearing altogether.

Case II. The patient whose uterus is retrodisplaced and bound down by adhesions is not always so fortunate, however, as case I, and case II had a different termination. Mrs. A., age 25, pregnant for the second time, summons me to her home June 12th, 1913. Her first pregnancy terminated in abortion at the third month, followed by fever and hemorrhage, and she was in bed for three weeks. I find her flowing profusely, and from her story she is three months pregnant. She has been spotting for the last two days, with severe pains in the back and in the lower abdomen, which are becoming of an intermittent character and more frequent. For the past two weeks she has had trouble in emptying her bladder. Examination reveals a tumor mass in the posterior fornix and I was not sure whether I was dealing with a retrodisplaced pregnant uterus or a broad ligament extra-uterine pregnancy. The patient was sent to hospital and after emptying both bladder and rectum a careful examination was made under anesthesia. I found a retrodisplaced pregnant uterus bound down by firm adhesions, the cervix being just at the symphysis and the os open admitting one finger. An abortion was inevitable. The uterus was emptied in the usual manner and a two and a half months fetus removed. Convalescence was complicated by a marked cystitis and pyelitis which cleared up in a measure after draining and irrigating the pelvis of the kidney. On the seventeenth day postpartum the patient left the hospital. There was pus microscopically in the urine, constipation was marked, and the uterus was immovable with the fundus in the Douglas. The patient refused to submit to an operation to correct the retrodisplacement.

The points of interest in this case are: 1st, an antecedent history of pelvic trouble; 2d, abortion; 3rd, amenorrhea for three months, and 4th, bladder disturbance and other symptoms showing beginning incarceration. Williams in his textbook on obstetrics, page 574, says, "Abortion is common in pregnancies complicated by retrodisplacements. It usually occurs in the course of the third month, when the growing uterus pretty well fills the pelvic cavity and, becoming irritated by the pressure to which it is subjected, begins to contract and thus brings about the expulsion of the ovum." Changes in the endometrium, due to the retrodis-

* Read before the San Francisco County Medical Society, October 20, 1914.

placement, are just as apt to bring an abortion as irritation of the uterus due to pressure.

These causal factors in the production of abortion can surely be cured and a corrective operation for the retrodisplacement should be performed. The operation best adapted to the particular case in hand should be selected, the non-pregnant state being the time most suitable. Even if the diagnosis of retrodisplacement is not made until the early months of pregnancy, the operation may still be performed without hesitation. Formerly it was believed that the pregnant woman should never be operated upon, the extraction of a tooth even being considered as a procedure that would cause abortion or premature labor. We now know, as a result of the employment of anesthesia and improved surgical technic, that many operations may be performed at this time with but little additional risk. As instances supporting this statement I cite cases III and IV.

Case III. Mrs. B, age 23, para I, referred to me by Dr. Bine, with a previous history free from pelvic trouble, was married in June, 1912; she menstruated last on Oct. 8th, 1912. I saw her for the first time in my office Nov. 22d, 1912, when she complained of pain in the lower abdomen and back. Examination revealed a retrodisplaced uterus with the fundus in the Douglas. The uterus was movable, but on attempting to replace it the promontory of the sacrum acted as an obstacle. However, it was easily replaced with a tenaculum on the anterior lip of the cervix and pressure on the corpus in the direction of the right sacroiliac synchondrosia. The patient was then fitted with a Smith-Hodge pessary and directed to return in two days. She came as directed but instead of feeling relieved as when she left the office, she was feeling badly. I examined her and found the fundus again in the Douglas. Employing the same procedure the uterus was replaced and a larger sized pessary used, but with no effect for at the end of the week the patient was back again complaining bitterly. The pessary was removed and by means of the Sims position and the use of a light vaginal tampon I tided her over the next two weeks; whenever she assumed the upright position or strained at stool the uterus became displaced. About the eleventh week the patient sent for me; I found her in much pain and examination revealed a greatly distended bladder. I catheterized her, sent her to the hospital, and the next morning an Alexander operation was performed. The round ligaments were easily found; they were thickened, easily pulled out, and of a bluish-smoky hue. The wound healed by first intention and the post-operative state was uneventful. A Smith-Hodge pessary was fitted but removed in a month as the uterus was well up in the abdominal cavity. The patient went to term, delivering herself spontaneously. An examination made six weeks postpartum found the uterus up in the normal anteverted position.

Case IV. Mrs. L, para III, was sent in to my service at the University of California Hospital complaining of inability to urinate. According to her history she was three and a half months pregnant. For the past month she had been troubled with frequent micturition. This gradually subsided but she noticed that urination was becoming

difficult, and during the previous week she had to stand erect, spread her legs, and press over the lower abdomen whenever she desired to empty the bladder; since the day before she had been dribbling. Examination showed a cystic tumor in the median line of the abdomen which seemed to arise from the pelvis with its upper margin two or three fingers below the umbilicus. This tumor has been mistaken time and time again for the pregnant uterus. By passing a catheter I removed 600 cc. of urine but did not empty the distended organ for fear of producing hemorrhage. In two hours I drew off 700 cc. more. Later under ether anesthesia a bimanual examination was made and a three and a half month incarcerated uterus was discovered. The entire Douglas was filled by the retrodisplaced uterus, the cervix being above the symphysis. It has been my experience that in cases where the Douglas is entirely filled by the uterus in such a manner as to obliterate the space, it is only a waste of time to endeavor to replace it by manual maneuvers. The uterus is held in this position by an intra-abdominal pressure so great that only operative procedure can overcome it. A laparotomy was decided upon and a median incision was made below the umbilicus, care being taken not to injure the distended bladder. The hand was introduced and with great difficulty the uterus was lifted out of the pelvis and to one side of the promontory. As it was liberated a loud sucking noise was produced by the inrush of air to fill the Douglas. A Smith-Hodge pessary was introduced to keep the uterus in its new position and the bladder was kept emptied by catheter every eight hours. Urotropin, ten grains thrice daily, was administered, and the patient kept quiet the first three days by the use of rectal suppositories each containing extracti opii, one-half grain, and extracti belladonnae, one eighth grain. She made an uneventful recovery from the laparotomy and left the hospital in fifteen days. The pessary was removed at the end of a month. This patient went to term and was delivered of an eight pound boy.

Formerly these cases were treated by inducing abortion, or by puncturing the retrodisplaced uterus through the Douglas. This procedure has been condemned because of the danger. In cases where the conditions are such that abortion is inevitable, or those where the uterus must be emptied, but which cannot be done in the ordinary way, the procedure of choice would be to empty the uterine cavity by a posterior vaginal hysterotomy.

Case V. This illustrates another clinical feature that is apt to occur in a retrodisplaced pregnant uterus if it does not terminate in abortion. Pregnancy may continue uninterrupted for a long while. This is possible by the marked upward growth of the anterior wall of the uterus, while the posterior wall retains its original position in the Douglas. By some this is termed partial incarceration, which to me is a misnomer, and is better designated as "sacculation."

Mrs. R. age 26, para II, was sent to me because the bag of waters had ruptured and she was supposed to be in labor. The patient was hurried to the University of California Hospital where the following history was elicited: This is her second pregnancy; the first was a full term uneventful pregnancy, but labor was complicated by a profuse hemorrhage which occurred immediately after delivery. The attending physician packed the uterus without removing the placenta. On the eighth day the packing and the placenta were removed. She was in bed for fourteen days and was free from fever so far as she knows. The present pregnancy is at the twenty-sixth week of gestation. She had had urinary difficulty for the past four months with retention of urine for the last three, relieved

by catheterization twice daily by her attending physician. Constipation is very pronounced, the bowels moving only with the greatest difficulty; even walking more than a block is out of the question.

The bag of water ruptured at seven o'clock in the evening of Feb. 18th, 1912; my examination was made on the evening of the 19th. The abdomen was ovoid and the distended bladder could be plainly made out. This was emptied by the use of a soft rubber catheter which had to be introduced nearly its entire length before the bladder contents, 600 cc., could be drawn off. After the bladder and rectum were emptied vaginal examination revealed a marked bulging of the posterior fornix, which was so pronounced that the mass could be plainly seen by separating the vulva. The cervix could not at first be located, but finally by inserting the fingers with palmar surfaces behind the symphysis I made out the cervix four or five centimeters above. Reposition was out of the question and the case was seen in consultation with Drs. A. J. Lartigau and R. K. Smith. Laparotomy was decided upon and the patient prepared for a Cesarean section. A median incision was made below the umbilicus, the hand inserted and the uterus freed from the pelvic cavity with great difficulty; this was followed by an inrush of air. The overhanging promontory was found to be the obstacle. The uterus was everted and the abdominal cavity walled off by hot pads. Opening the uterus a six and a half months' fetus was removed, which breathed, but died the same day; the placenta was on the posterior wall. The secundines were removed and the uterus sutured after Sanger's technic. Convalescence was complicated by a colitis and a cystitis which persisted for four weeks with considerable mucus and mucous casts in the stools. The patient left the hospital on the twenty-eighth day after operation.

To recapitulate: Spontaneous reposition is the rule; if this does not occur the patient will either abort or symptoms of incarceration will develop before the end of the fourth month. In extremely rare cases the pregnancy may go to term; this can happen only if the uterus becomes sacculated.

Pregnant women who give a history of antecedent uterine trouble or who complain in the early months of urinary disturbances should be given a thorough vaginal examination. If retro-displacement of the gravid uterus is diagnosed the procedure that I advocate is bimanual reposition of the uterus aided by traction upon the cervix and pressure on the corpus. If replacement cannot be accomplished thus it should again be attempted under ether anesthesia. After replacement a properly fitting Smith-Hodge pessary is introduced which is removed after the fourth month. If replacement is impossible one of the corrective operations for the condition should be performed, which is best done about the eleventh or twelfth week.

If symptoms of incarceration manifest themselves the rectum and the bladder should be emptied and an attempt made under ether anesthesia to replace the uterus; if this is unsuccessful a laparotomy should be performed with the object of righting the uterus to permit the pregnancy to go to term. If symptoms of infection are present however, or the case is one of inevitable abortion, the uterus should be emptied in the usual manner, and if this is found impracticable resort must be had to posterior vaginal hysterotomy.

CASE OF PELLAGRA.*

Reported by Dr. WM. WATT KERR.

Nellie H., age 44, domestic servant. Came to hospital Oct. 13, 1914, complaining of an eruption on hands and face. Until Oct. 3rd she had been perfectly well, but that morning she noticed swelling and redness of both hands and feet; there was also a feeling of numbness in the extremities. With the exception of a feeling of burning in the affected parts she felt perfectly well.

She said that on Oct. 4th blisters appeared on the hands, and that the redness increased in intensity, while on Oct. 5th the swelling had left the feet, but the eyes had begun to swell.

She had not been taking any medicine nor eating maize or corn, but had been eating rice twice a day for about a week previous to the outbreak, but attributed the skin condition to the fact that she had been using water for washing that contained a considerable quantity of lye.

When she came to the hospital ten days after the commencement of the sickness she said that for a long time she had been constipated for two or three days, and then would have an attack of diarrhea for about a week; that this took place without any relation to time of eating or quality of food, and was not accompanied by any colic pains. There was some dyspnea and palpitation on exertion, but she has not had any precordial pain, edema of the extremities, cough, night sweats or loss of weight. The temperature on admission was 99° F. in the morning, with an evening exacerbation to 101° F., and this type has been maintained ever since.

The family and hereditary history was negative. She came to this country at the age of nineteen, and has lived in Oakland and San Francisco since that time. She had the ordinary diseases of childhood, but nothing in adult life with the exception of a malarial attack eleven years ago that lasted for three months. She has had a fair appetite, used one glass of wine daily with her meals, and only took one cup of tea per day.

Physical Examination.—The patient seems to be confused mentally; asked such questions as "what church she was in," "the number of her room," etc. She had difficulty in putting on her dress, would put on the waist upside down, insisted on getting out of bed. This condition has increased, so that she has become much more irrational and restless, tears the bandages from her hands, under the impression that she is being restrained. At times she realizes her condition, cries, says she is "buggy."

Skin.—Face, except forehead, ears and neck, is of dark red color; is dry, tense and shiny, and beneath the eyes is exfoliating. Borders are fairly sharp, and are not indurated. On hands, the lesions are limited to the backs of the hands, border is sharply defined, and the coloration extends along the backs of the fingers to the first inter-phalangeal joints; it is limited at the wrist. Across the back of the left hand is an exfoliated area, seven cm. long and three cm. wide, showing bright red, tense, shiny skin beneath. Four fingers of the left hand show bullae filled with yellowish serum-like fluid. The back of the right hand and fingers show similar lesions.

The eyes are normal, with the exception of a slight amount of conjunctivitis. Ears are normal, teeth bad, tongue is red along the left edge, with some desquamation. In the neck there are a few palpable glands in the anterior chain, but the thyroid is normal.

Thorax.—At the upper portion of the thorax

* Read before the San Francisco County Medical Society, October 20, 1914.

there is an erythematous area, red, well defined and perfectly symmetrical.

There is nothing of any special significance in the heart, lungs, liver or spleen.

Smell.—She is not able to detect asafetida, but can easily perceive pleasant odors. There is no abnormality in taste. Patient feels weak, and cannot walk steadily; otherwise, with the exception of the changes in mentality already noticed, the nervous system is normal.

Examination of Eyes (by Dr. Franklin) Oct. 16, 1914.—Right eye, inferior temporal quadrant of the disc is grayish white, and the margin is blurred. Lamina is visible. Post neuritic partial atrophy. Left eye, the entire disc is hazy; vessels are surrounded by a thin sheath of connective tissue; margin is blurred; post neuritic partial optic atrophy.

The urine, feces and Wassermann reaction were all negative.

Examination of blood shows the red corpuscles diminished to two and a half millions, with hemoglobin at 65% and color index above 1%. The leukocytes vary from 11,000 to 7,500. On one count the polymorphonuclears were 80½%, and in another they were 64%. In the high polymorphonuclear count the total lymphocytes count amounted to 17½%, and in the 64% count they amounted to 35%. There was no eosinophilia.

The particular interest of this case is its acute character, seeing it is only seventeen days since the first symptoms appeared, and the fact that the mental disturbance has been increasing rapidly during the past six to eight days. The blood condition should also be noticed, as it approximates that of pernicious anemia but leukopenia is absent. The history of long standing disturbance in the intestines is of importance from an etiologic point of view.

The patient died on November 10. The whole known course of the disease only lasting six weeks. The findings at the autopsy were entirely negative.

PACIFIC ASSOCIATION OF RAILWAY SURGEONS; IMPORTANT NOTICE OF MEETING.

The Pacific Association of Railway Surgeons will hold its annual meeting on Friday afternoon, June 25, 1915.

As the American Medical Association will be in convention in San Francisco at the same time (June 21 to June 25, inclusive) and many papers will be read in their Scientific Section, it has been decided to omit the usual Scientific Section at the Railway Surgeons' meeting this year.

Accordingly, the following program has been planned for the day: The members of the Association and their families will leave on the 1:45 p. m. Northwestern Pacific boat for a trip to Mt. Tamalpais, arriving there at about 3 p. m. Dinner will be served at 4 p. m., to be followed by the President's address and the election of officers for the ensuing year. At 6 p. m. the Association will be conveyed by special train and boat to the Panama-Pacific International Exposition. One of the most enjoyable features of this trip will be the view from the bay of the night illuminations.

L. P. HOWE.

CALIFORNIA PEDIATRIC SOCIETY—NORTHERN BRANCH.

The third meeting of the California Pediatric Society—Northern Branch, will be held on Thursday evening, April 22nd, in the County Medical Library at 8:15. The program will be as follows:

I. A Study of the San Francisco Midwife based on the Board of Health Birth Registrations from August, 1913, to August, 1914. Adelaide Brown.

II. The Proper Position of Tonsillectomy in Pediatrics. Sanford Blum.

III. The Relation of Mouth and Throat Infections to Diseases in Other Parts of the Body. T. C. McCleave.

It is hoped that anyone interested in child welfare problems will come to this meeting and join the Society. We will welcome all who are really interested in any phase of child welfare work.

WILLIAM PALMER LUCAS, Secretary.

BOOK REVIEWS

The Clinics of John B. Murphy, at Mercy Hospital, Chicago. Dec., 1914. Vol. III, No. 6. Published Bi-Monthly by W. B. Saunders Company, Philadelphia and London.

Contents: The New Offices of Dr. John B. Murphy and his Staff. Murphy's Clinical Talks on Surgical and General Diagnosis. Auto-sensitized Autogenous Vaccines. Impacted Fracture of External Tuberosity of Tibia. Sarcoma of the Right Tibia. Exostosis of Interarticular Surface of Upper End of Left Tibia. Multiple Metastatic Arthritides. Cartilaginous Exostosis of Left Humerus. Bilateral Tuberculous Epididymitis with Abscess Formation. Gummatous Tumor of the Testicle. Perforating Duodenal Ulcer Fixed to the Anterior Abdominal Wall. Retroperitoneal Sarcoma of the Upper Abdomen. Filling up the Lesser Peritoneal Cavity.

Medical Gynecology. By S. Wyllis Bandler, M. D., Adjunct Professor of Diseases of Women, New York Post-Graduate Medical School and Hospital. Third Thoroughly Revised Edition. Octavo of 790 pages, with 150 original illustrations. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, \$5.00 net; half morocco, \$6.50 net.

In the six years since this book was first published it has passed through three editions, a fact which indicates both its wide popularity among the profession and the desire of the author to keep it up to date.

The way in which the book is kept abreast of the times is best illustrated by the extended chapter on the ductless glands. Formerly this subject would not have been included in a text-book on gynecology, but at present there is good reason for doing so, for it has been clearly shown that an intimate relationship exists between several and perhaps all of these glands on the one hand and the generative organs of women on the other. As yet, few definite statements of therapeutic significance can be made regarding this relationship,

With the amount of labor which has been expended in making this the most up-to-date text-book the author mentions a number of interesting and important facts lately brought to light by clinical observations and animal experimentation. There is no doubt that as future editions appear this chapter will become more and more essential and helpful toward the treatment of a number of diseases.

The general plan of the book, its clear descriptions, its numerous illustrations and its thorough consideration of the medical treatment of gynecological diseases are already well known and require no comment.

J. M. S.

Diseases of Bones and Joints. By Leonard W. Ely, M. D., Associate Professor of Surgery, Leland Stanford Junior Univ., San Francisco, Cal. Sextodecimo: 220 pages, 94 illustrations. Surgery Publishing Co., New York. Price, cloth, \$2.00.

This is a modest volume of approximately one-fourth the size of the standard work of Goldthwait, Painter and Osgood, bearing the same title. As set forth in the preface, our author aims to lay down broad general principles, and to avoid a mass of detail, tending only to confuse the general practitioner for whom the work is primarily intended. In so doing, however, it would seem too much space is given to the pathology and not enough to the principles of diagnosis and treatment, the latter especially being of interest to the general practitioner.

The well-known contention of the author concerning the etiology of bone-tuberculosis—i. e., that it can occur only in synovia and red marrow—is clearly elucidated and well defended. However, Fraser of Edinburgh, in a paper read before the Orthopedic Section of the A. M. A. last year, presented logical reasons for believing that bone marrow in general and not the red variety in particular, may be the seat of the disease, thus directly opposing our author's views.

It is only through such scientific differences of opinion as these that we arrive at the truth, hence on this point alone the book has a claim to existence. The author also makes a good working classification of the large class of chronic arthritides of undetermined origin, concerning which there has always been so much confusion in the past. This classification is based upon the pathology, as is proper.

The book is profusely illustrated, and the language used is terse, simple and free from too scientific nomenclature. In general, its sins—or shall we say virtues—are only those of omission.

G. J. McC.

Local and Regional Anesthesia, including Analgesia. By Carroll W. Allen, M. D., of Tulane University, New Orleans, with an introduction by Rudolph Matas, M. D., of Tulane University, New Orleans. Octavo of 625 pages with 255 illustrations. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, \$6.00 net; half morocco, \$7.50 net.

The number of books on local anesthesia issuing from the American press marks a praiseworthy reawakening of American interest. Like not a few other procedures originating and having their early beginnings in this country, local anesthesia lay fallow until European authorities worked out and perfected methods fit for general application. The words of the prophets have had to be

reintroduced to their own country in order to receive proper recognition and attention.

Allen's is the first comprehensive American treatise on this subject. In a number of chapters, especially those on the head and face, certain selected methods have received exhaustive attention, particularly those worked out by the author's teacher, Matas. They are elucidated by numerous good illustrations, taken mainly from the writings of Braun and Härtel. We regret not being able to find much more to praise in what seemed at first sight a most promising book. Most of the other chapters are less well worked out. A number of important methods have been passed by without mention—Hirschel's anesthesia for cancer of the breast, and Gros' use of anesthetic drugs in bicarbonate solution, for instance. The book is elaborate and perhaps even unnecessarily discursive within certain set limits, where the reader feels that Allen has had abundant personal experience, but it is disappointing in not giving the general oversight to be expected of so bulky and pretentious a volume.

A number of the opinions brought forward are not in keeping with modern practice; one must assume that they have been formulated more on theoretical grounds than as a result of personal trial. E. g., the author advocates blocking the larger nerves and plexus only after laying them bare: "The paraneural injection of the brachial plexus both above the clavicle and below it in the axilla, as has been recommended and practiced by some operators, but particularly in the axilla, is a far too dangerous procedure to find a place in the operative methods of conservative operators" (p. 218). This rejection of methods which in the hands of others have had so widespread a success must be regarded as a distinct step backward, and cannot proceed from sufficient personal experience and trial. To reject the subcutaneous method of brachial plexus anesthesia would take the procedure out of the hands of the general practitioner and rob it of half its usefulness.

The arrangement of the book does not seem to follow either systemic or regional anatomy, and it is difficult to find one's way about in it. Matters relating to the anesthesia of one particular nerve are scattered about in half a dozen various paragraphs.

As to style—there is none. Sentences eight or ten lines long, wanting subjects or predicates, and all sorts of grammatical errors—"achievements is," "this phenomena," "openings is"—the book bristles with them, and they make disagreeable reading enough, but mistakes like 4% B-Eucain instead of 0.4% (p. 217)—these might cost a life!

What is in the book is too valuable to be spoiled. Subsequent editions should receive thorough revision from A to Z.

The book is full of excellent illustrations, which alone make it worth having. It is well printed and bound.

L. E.

A Treatise of the Nose, Throat and Ear. By William Lincoln Ballenger, M. D., Professor of Laryngology, Rhinology and Otology in the College of Physicians and Surgeons, Chicago. New (4th) edition, thoroughly revised. Octavo, 1080 pages, with 536 engravings, mostly original, and 33 plates. Cloth, \$5.50 net. Lea & Febiger, Philadelphia and New York, 1914.

The fourth edition of Ballenger's text-book will serve only to increase its already great popularity.

book on Otolaryngology in the English language, Balenger has succeeded in producing a work which has no equal in German or in English.

The main new features of the book are the chapters on the labyrinth written by Dr. J. R. Fletcher. These have been illustrated by numerous and very practical plates, showing in a diagrammatic manner the method by which nystagmus and other reactions originating from the labyrinth are formed.

Having at his disposal the various works in labyrinthine surgery and diagnosis which have recently appeared in German, he is enabled to concentrate the facts and give to the student the whole theory and practice of labyrinthine surgery in a very distinct and clear cut manner. The plates accompanying this part of the book are exceedingly ingenious, the illustrations of the Neumann labyrinth operation are better than any the reviewer has ever seen. Certain new terms such as "destructive, disharmony," have been introduced which seem superfluous but may perhaps find a permanent place in the literature.

The fronto-ethmoid operation of Mosher is described and illustrated in detail and a considerable amount of importance is attached to this very unique method of Boston's leading Rhinologist.

Such subjects as autogenous vaccines, the treatment of hay fever, the functional test of hearing, otosclerosis, steam vaporization, Haynes' operation on the cisterna magna are all thoroughly discussed. Other subjects which have recently aroused the attention; the treatment of meningitis, a good chapter on abscesses of the brain, the use of salvarsan in the treatment of syphilis, with its attending dangers to the eighth nerve, have been described and the limitations noted with great fullness.

In fact, every phase of modern rhinology and otology has been gone over with great thoroughness. It is a text-book par excellence for advanced students and specialists. H. H.

SOCIETY REPORTS

KERN COUNTY.

At the meeting of the County Medical Society (Kern County), on February 15th, among other things that came up was the matter of outside physicians doing work which properly should come under the County Physician, but on account of the size of the county, etc., was impossible until such time as they were removed to the County Hospital. Now under the County Government Act, the supervisors have not authority to pay any physician other than as a salary to the County Physician for such services. So that it was duly moved and seconded and unanimously carried, that a communication be sent to the secretary of the State Society to see if the attorney for the State Society could not draw a bill as an amendment to the County Government Act to allow a physician pay for such services to indigent patients if authorized by the County Physician or the supervisor of the district, or by any other legal means available.

The Kern County Medical Society would appreciate it if you would take it up. Also our Assemblyman from this district, I think, would introduce it in the Assembly.

Very truly yours,

Signed: C. H. MORRIS,
Chairman Committee on Legislation.

MARIN COUNTY.

At the annual meeting of the Marin County Medical Society, held January 28, 1915, at San Rafael, Cal., the following officers were elected for ensuing year, to wit:

Dr. E. J. Hund, Ross, Cal., president.

Dr. A. H. Mays, Sausalito, Cal., vice-president.

Dr. O. P. Stowe, Mill Valley, Cal., secretary-treasurer.

At a meeting of the Marin County Medical Society held at San Rafael February 11, 1915, Dr. A. S. Green of San Francisco, Cal., presented a very interesting paper on the subject of "Smith's Intra-capsular Operation for the Enucleation of Cataract." Those present were Drs. E. J. Hund, H. O. Hund, O. W. Jones, W. F. Jones, J. H. Kuser, H. O. Howitt, A. H. Mays, E. W. Alexander, R. G. Dufficy, O. P. Stowe, also Drs. Stanley and Marks, San Quentin.

O. P. STOWE, Secretary.

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

During the month of January, the following meetings were held:

Section on Medicine, Tuesday, January 5th.

1. Routine Examination of the Cerebrospinal Fluid in Syphilitic Disease of the Nervous System; with recent modifications in the preparation of Lange's colloidal gold solution. T. G. Inman. Discussed by W. F. Schaller, G. F. Shiels, C. G. Snow, W. P. Lucas, H. D'A. Power and G. L. Boalt.

2. Medical Inspection of Schools in San Francisco. T. D. Maher. Discussed by W. P. Lucas and H. D'A. Power.

3. Functional Disturbances of Oesophagus. C. W. Lippman.

General Meeting, Tuesday, January 12th.

1. The Diagnosis of Chronic Interstitial Nephritis before the Development of Symptoms. Thomas Addis. Discussed by W. Ophuls and R. Bine.

2. Cholecystectomy. Lewis W. Allen. Discussed by J. Rosenstirn and F. W. Birtch.

Section on Surgery, Tuesday, January 19th.

1. Some Interesting Tumors of the Cecum. Harold Brunn. Discussed by H. C. Moffitt, S. Pope, L. Eloesser and C. W. Lippman.

2. The Prevention of Peritoneal Adhesions by the Use of Citrate of Soda Solution. A Clinical Report. Saxton Pope. Discussed by H. A. L. Ryfkogel, J. T. Watkins, H. Brunn, F. B. Carpenter and C. L. Hoag.

Section on Eye, Ear, Nose and Throat, Tuesday, January 26th.

1. Proptosis due to Orbital Hemangioma. A. S. Green. Discussed by V. Hulen.

2. Ozena of the Larynx. H. McNaught.

SACRAMENTO COUNTY.

I herewith hand you an account of the February meeting of the Sacramento Society for Medical Improvement for use in the Journal.

Regular meeting February 16, 1915, Hotel Sacramento, 8:45 P. M. President J. B. Harris in the Chair. 39 members present.

Dr. J. H. Parkinson announced the death of Dr. H. L. Nichols, charter member of the society.

Dr. A. Gottschalk showed a case of Cyst of the neck.

Dr. E. C. Turner showed a case of Erythromelalgia with clinical findings.

Dr. J. A. McKee reported a case of Eclampsia followed by a post partum psychosis.

Dr. G. N. Dufficy reported a case of small embryo twin adherent to placenta at normal labor.

Dr. G. A. Foster reported a case of labor without any uterine cramps.

Dr. E. M. Wilder reported a case of Lymphangitis of penis.

Dr. J. O'Brien reported a case of Axillary stab wound with severe hemorrhage and infusion of five pints of saline intravenously.

Dr. E. Pitts reported a case of pernicious anaemia with a count of 560,000 with remissions.

Dr. L. E. Farmer reported a case of fracture of skull with comminution.

Dr. E. W. Twitchell reported a case of diabetes in an infant.

Papers of the evening followed:

1. Histology and Pathology of the Uterine Support, with Especial Attention to the Round Ligaments. By S. H. Buteau, M. D., Oakland, Cal.

2. Correction of Uterine Displacements with Especial Attention to the Buteau Procedure. By C. A. Dukes, M. D., Oakland, Cal. Discussed by Drs. A. C. Hart, Henderson and White.

Lantern slide illustrations.

F. F. GUNDRUM, Secretary.

SAN JOAQUIN COUNTY.

The regular monthly meeting of the San Joaquin County Medical Society was held on Friday evening, January 29th, at the offices of Drs. Fitzgerald and Dozier. The following members were present: Drs. E. A. Arthur, W. F. Priestly, Minerva Goodman, J. T. Davison, W. J. Backus, B. J. Powell, S. E. Latta, C. R. Harry, H. E. Sanderson, F. P. Clark, J. D. Dameron, J. V. Craviotto, R. T. McGurk, H. Smythe, L. Dozier, W. W. Fitzgerald, H. J. Bolinger, R. B. Knight, D. R. Powell and Dr. C. L. Hoag of San Francisco as guest. The minutes of the last meeting and the financial report for 1914 were read and approved. The Committee on Admissions reported favorably on the names of Drs. J. J. Myers and J. M. Gardner of Lodi, W. F. Cothran of Tracy and C. E. Stagner of French Camp.

President McGurk announced the topic for the evening's discussion to be "A Symposium on Typhoid," and the following subjects were discussed: "Medicine in Typhoid," Dr. C. R. Harry; "Vaccine in Typhoid," Dr. W. J. Backus; "Perforation in Typhoid," Dr. J. D. Dameron; "Carriers in Typhoid," Dr. E. A. Arthur; "Laboratory Aids in Typhoid," Dr. L. Dozier; "Prevention of Typhoid," Dr. W. F. Priestly; "Sequelae," Dr. J. V. Craviotto; "Blood Transfusion in Typhoid," Dr. Carl L. Hoag.

At the solicitation of Dr. Fitzgerald, the members adjourned to the Lunchette Cafe, where a very enjoyable and dream-producing German feed was partaken of.

DEWEY R. POWELL, Secretary.

SAN LUIS OBISPO COUNTY.

At the regular meeting of the San Luis Obispo County Medical Society, held on the first Saturday of December, 1914, the following officers were elected:

Dr. R. M. Bradbury, President; Dr. H. W. Jones, Secretary and Treasurer; Dr. P. K. Jackson, First Vice-President; Dr. Wm. R. Hedgpeth, Second Vice-President; and S. Helgesen, Third Vice-President.

DR. H. W. JONES, Sec'y-Treas.

SHASTA COUNTY.

At a regular meeting of the Shasta County Medical Society, held January 30, 1915, Dr. B. F. Saylor, of Redding, was elected President, and Dr. Earnest Dozier was elected Secretary and Treasurer.

EARNEST DOZIER, Sec'y-Treas.

DEPARTMENT OF PHARMACY AND CHEMISTRY.

Edited by FRED I. LACKENBACH.

Since publication of New and Nonofficial Remedies, 1914, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

CANTHARIDIN.—The anhydride of cantharidic acid preparations of cantharidin are used in place of corresponding preparations of cantharides and have the advantage of being cleanly, and more uniform in strength. A 0.1 per cent. solution of cantharidin in a fixed oil raises blisters when kept in contact with the skin (Jour. A. M. A., Jan. 2, 1915, p. 53).

CANTHARIDIN, MERCK.—A non-proprietary preparation of cantharidin. Merck & Co., New York (Jour. A. M. A., Feb. 20, 1915, p. 665).

BENZENE, MEDICINAL.—A liquid consisting almost entirely of benzene, C_6H_6 . Medicinal benzene has been used in the treatment of leukemia. In many cases the improvement is such as to suggest an apparent cure. A large number, if not all, cases relapse or succumb to the toxic action of the benzene. The drug is in the experimental stage and should be used with caution (Jour. A. M. A., Jan. 2, 1915, p. 54).

BENZENE, MERCK, H. P. CRYSTALLIZABLE.—A brand of medicinal benzene. Merck & Co., New York (Jour. A. M. A., Jan. 2, 1915, p. 54).

LEUCOCYTIC EXTRACT.—An extract of leucocytes obtained from exudates produced in the pleural cavity of rabbits or other animals. It is said to be of value as an aid to specific serums or antitoxins and vaccines. It is claimed to be of use itself where the nature of an infection is not known. Its use is in the experimental stage (Jour. A. M. A., Jan. 2, 1915, p. 54).

LEUCOCYTE EXTRACT, SQUIBB.—A leucocyte extract prepared according to the method of Hiss. It is sold in syringes containing 10 cc. E. R. Squibb & Sons, New York City (Jour. A. M. A., Jan. 2, 1915, p. 54).

SILVER CITRATE, MERCK.—A brand of silver citrate admitted to New and Nonofficial Remedies. Merck & Co., New York City (Jour. A. M. A., Jan. 2, 1915, p. 54).

SILVER LACTATE, MERCK.—A brand of silver lactate admitted to New and Nonofficial Remedies. Merck & Co., New York (Jour. A. M. A., Jan. 2, 1915, p. 54).

DIGITOXIN, MERCK.—A brand of digitoxin admitted to New and Nonofficial Remedies. Merck & Co., New York (Jour. A. M. A., Jan. 2, 1915, p. 54).

LUETIN.—An extract of the killed cultures of several strains of the *Treponema pallidum*, the causative agent of syphilis. It is employed for the diagnosis of syphilis. It is of use in the examination of tertiary cases, but rarely gives a positive reaction in primary cases or in untreated secondary cases.

LUETIN, MULFORD.—Packages sufficient for a single test, for five tests and for fifty tests. The H. K. Mulford Co., Philadelphia (Jour. A. M. A., Jan. 23, 1915, p. 343).

GLYCOTAURO CAPSULES (half size).—Each capsule contains Glycotauro (see N. N. R.) 0.15 Gm. Hynson, Westcott & Co., Baltimore, Md. (Jour. A. M. A., Jan. 23, 1915, p. 343).

ALCRESTA IPECAC TABLETS.—Tablets containing an adsorption product of ipecac alkaloids and Fuller's earth, each tablet representing 10 grs.

of ipecac. The ipecac adsorption product is said to pass the stomach unchanged but to be decomposed in the intestine with liberation of the ipecac alkaloids and thus to exert the amebicidal action of ipecac in the body. Eli Lilly & Co., Indianapolis, Ind. (Jour. A. M. A., Feb. 13, 1915, p. 591).

TYPHOID COMBINED VACCINE (PHO-PHYLACTIC).—Marketed in vials and syringes, each package containing three doses. Schieffelin & Co., New York (Jour. A. M. A., Feb. 20, 1915, p. 665).

STOMACH BITTERS.—Experiments conducted by A. J. Carlson and his co-workers at the University of Chicago show that the widespread use of bitter drugs as a means of stimulating the appetite or aiding digestion is a therapeutic fallacy. He finds that such drugs as gentian, quassia, calumba, hops, condurango and the elixir of quinine, strychnine, and iron, do not increase hunger contractions of the stomach and the related phenomenon nor induce increased secretion of hydrochloric acid or pepsin (Jour. A. M. A., Jan. 2, 1915, p. 58).

THEOBROMINE VERSUS CAFFEINE.—Lester Taylor finds that caffeine gives a moderate relief from the cardiac symptoms in myocardial insufficiency, but also causes the constant appearance of distressing nervous and gastric symptoms. He further finds that the clinical diuretic action of caffeine may be better performed by large doses of theobromine sodium salicylate, N. N. R., without the unpleasant side-effects (Arch. Int. Med., Dec., 1914, p. 769).

PURITY OF ETHER AND POSTANESTHETIC GLYCOSURIA.—Animal experiments by Ross and Hawk show that postanesthetic glycosuria is not due to impurities as has been claimed, but is brought about by a carbohydrate-free diet prior to the anesthesia. Those who claim that the U. S. P. tests for the purity of ether are insufficient, should present better evidence than they have so far done (Jour. A. M. A., Feb. 20, 1915, p. 668).

COD LIVER OIL VERSUS MILK, BUTTER AND EGGS.—Like other fats, cod liver oil is readily digested and utilized in the body. Its disagreeable taste has largely outweighed its availability as a nutriment. Recent experiments have established that the peculiar growth promoting qualities of cod liver oil are likewise possessed by butter and egg-yolk fat. There seems to be no reason, therefore, to administer the unpalatable cod liver oil (Jour. A. M. A., Feb. 20, 1915, p. 667).

COD LIVER OIL CORDIALS.—To determine if the growth promoting principle of cod liver oil is contained in the oil-less cod liver oil preparations on the market, feeding experiments have been made with some of these preparations by J. P. Street of the Connecticut Experiment Station. In these experiments it was found that the normal nutrition and growth of rats was not maintained when the fat of a standard ration was replaced by a representative amount of Hagee's Cordial of the Extract of Cod Liver Oil Compound; Vinol; Wampole's Perfected and Tasteless Preparation of an Extract of Cod Liver; and Waterbury's Compound, Plain. When, then, these animals were placed on a ration containing an equivalent amount of cod liver oil, normal nutrition and growth was soon established (Jour. A. M. A., Feb. 20, 1915, p. 638).

CITARIN.—Citarin was admitted to New and Nonofficial Remedies in 1906. The Council on Pharmacy and Chemistry held that experience had failed to demonstrate the value of Citarin as a uric acid solvent and hence directed the omission of it from New and Nonofficial Remedies (Jour. A. M. A., Feb. 20, 1915, p. 685).

RADIO-REM.—The Radio-Rem outfit is adver-

tised by Schieffelin & Co. It is said to produce water charged with radium emanation by inserting rods stated to be coated with radium sulphate in water. Not only is the internal use of radium emanation without proved value, but the amount of emanation said to be produced by the apparatus is far below the amounts generally used by those who believe in its efficacy. It is claimed that this outfit supplies a substitute for natural mineral water; but there is no proof that the value of mineral waters depends on contained radium emanation (Jour. A. M. A., Jan. 30, 1915, p. 456).

VENARSEN.—Venarsen, marketed by the Intravenous Products Co. for the treatment of syphilis, pellagra, tuberculosis, anemia, etc., is a secret preparation. One circular suggests that Venarsen is a sort of an improved salvarsan, but in reality it gives no clew whatever as to the real character of the preparation. Another circular suggests that Venarsen is a shot-gun combination containing arsenic, mercury and other anti-syphilitic drugs. It is not only the right but the duty of physicians to know the essential composition of what they prescribe; a physician who uses a remedy the composition of which is kept secret, even in part, is not doing his duty to his profession nor to his patient. It is almost criminal for physicians to use a preparation of secret composition and to administer it by intravenous injection—a method which in itself is altogether likely to give rise to accidents (Mo. State Med. Jour., Jan., 1915).

THE HARRISON LAW A NATIONAL OBLIGATION.

Both newspaper comments and professional criticisms indicate that there is much misunderstanding of the Harrison law, which has just gone into effect. Many physicians have not fully grasped its purpose. A brief statement of the history of the law may, perhaps, be of value.

The Harrison law is not the result of any sudden spasmodic impulse on the part of Congress. It is, on the contrary, a part of a carefully considered program for the control of the traffic in habit-forming drugs and especially in opium. This movement is not confined to this country; it is international, although the United States, it is a pleasure to record, has been the leader in the movement. It has been a part of the established policy of our government since the earliest relations with China and other Oriental nations to discourage the opium traffic in the Far East. As early as 1833, a treaty with China forbade any American citizen engaging in the opium trade. In 1906, China began earnest efforts to crush out this evil. To aid her in this, the United States initiated an international movement to secure the co-operation of the leading Western nations. As a result, there met at Shanghai in February, 1909, the representatives of thirteen nations, comprising Austria-Hungary, China, France, Germany, Great Britain, Italy, Japan, the Netherlands, Persia, Portugal, Russia, Siam and the United States. This conference resulted in the establishment of the International Opium Commission, appointed to study the entire question and to submit recommendations. The next step was taken December 1, 1911, when a conference of the powers represented in the Shanghai Commission was held at The Hague. January 23, 1912, the members of the conference signed an agreement for a strict regulation of both national and international traffic in opium, morphine and cocaine. To the carrying out of the program for the restriction of habit-forming drugs, not only is our national honor pledged, but also as leaders in this movement, it is the plain

duty of our nation to initiate such legislation as may be necessary.

For the carrying out of our international obligations, three bills were drafted. The first, H. R. 1966, prohibited the importation of opium for any other than medicinal purposes. The second, H. R. 1967, prohibited the manufacture of smoking opium in the United States. Both of these bills became laws over a year ago. As there are only a few firms in the country which import opium and none which manufacture it, these laws affected a limited number of persons and so attracted little public comment. The third bill, H. R. 6282, which became a law December 17, 1914, is the Harrison law, now going into effect. In various forms and under different names it has been before Congress for nearly six years. It does not forbid the sale of habit-forming drugs. Only state laws can do that in this country. It restricts traffic in them to persons engaged in legitimate businesses in order to make it possible to trace these drugs from the importer to the ultimate consumer. The suppression of illegitimate traffic in these drugs can be accomplished only by state laws properly drawn and enforced.

The object to be attained is the world-wide restriction of the use of opium and cocaine to their proper medicinal purposes. In securing this, the sympathy and support of every right-minded man and woman should be forthcoming. But physicians, especially, as those who know better than any other class the dangers and ravages of drug addictions, should endorse and support in every way this effort for the uplifting of humanity, to which our national honor is pledged.—Journal of the A. M. A.

THE PHYSICIAN AND THE HARRISON NARCOTIC LAW.

From the large number of inquiries received, it is evident that many physicians are in doubt as to what they are required to do under the Harrison law and what the law will do to them. So many misstatements on this subject have appeared that a brief summary of the purposes and requirements of the law may be reassuring.

The law affects the physician both as a prescriber and as a dispenser of drugs. The only effect it has on the former—the prescribing physician—is that it requires him to register with the collector of internal revenue of the district, and that in writing a prescription for narcotic or habit-forming drugs he must write thereon the name and address of the patient, have on the prescription his office address and his registry number, and sign his name in full. He can—and should, probably, if he has printed blanks—have his registry number printed on the blank. He need not keep either copies or records of prescriptions; this is done by the druggist. These prescriptions cannot be refilled. This is all there is to the Harrison narcotic law so far as it affects the prescribing physician. The only expense is in securing his license once a year, at a cost of one dollar. And the only facts to be kept in mind in writing prescriptions are that the patient's name and address must be written thereon and that the physician must sign his name in full—precautions, however, that should be taken on all prescriptions.

If the physician desires any of the specified drugs for his own use, he must then make out an order for them on a blank form bearing his registry number. These blanks are furnished by the Internal Revenue Department in packages of ten for ten cents. The physician cannot order drugs for his own use on a prescription blank.

If a physician is in personal attendance on a patient, he can administer any treatment he sees fit in the form of hypodermic injection, sprays, applications, etc. If he orders a nurse to give such treatment, then the written order must appear in the history sheet with the physician's initials. The statement recently appeared in a druggists' journal that an official ruling had discriminated between a visit to the patient at his home and personal treatment of a patient by a physician at his office, and that one was personal attendance and the other was not. This statement is without foundation. No such ruling has been made.

If a physician dispenses his own drugs, then he must conform to the same restrictions as a druggist. He must order the drugs specified by this law on the blanks furnished by the internal revenue collector, and he must keep a record of the dispensing of such drugs, the date, the quantity and the name and address of the person to whom they were given. This record must be kept in a "suitable blank book," and must be preserved for two years. Drugs dispensed while the physician is in personal attendance on the patient do not need to be recorded. Neither do preparations which do not contain more than 2 grains of opium, $\frac{1}{4}$ grain of morphine, $\frac{1}{8}$ grain of heroin or 1 grain of codeine.

These provisions are simple and need cause the physician little annoyance. The great majority of physicians write prescriptions. Physicians who dispense, only occasionally dispense preparations of narcotic drugs. The restrictions for both classes are simple and easily observed. The cost for all physicians is the same, a nominal fee for registration, a small cost for order blanks. Additional rules may be found necessary as the law is enforced, but there is at present nothing that need cause physicians any inconvenience or annoyance.

But what about old habitués, persons suffering from painful and incurable diseases, and others to whom opium in some form is absolutely necessary? Every physician knows of such cases. For them the physician so long as he complies with the law of his own state can prescribe whatever he sees fit. But it must be done openly and without attempt at evasion and the physician must be ready and able at any time to justify his acts. The whole purpose of the law is to restrict the use of opium and cocaine to legitimate channels.—Journal of the A. M. A.

FEDERAL OPIUM-COCA LAW.

The following is a partial list of preparations that come within the scope of the new Federal Law and has been compiled by D. O. Haynes & Co., New York:

This law applies to the production, importation, manufacture, compounding, sale, dispensing, or giving away of Opium or Coca Leaves, their salts, derivatives or preparations.

It does not apply to preparations which contain two (2) grains or less of Opium, or $\frac{1}{4}$ grain or less of Morphine, or $\frac{1}{8}$ grain or less of Heroin, or 1 grain or less of Codeine, or any salt or derivative of any of them in one fluid ounce; or if a solid, or semi-solid preparation, in one avoirdupois ounce.

Neither does it apply to Liniments, Ointments or other preparations which are prepared for external use only, except Liniments and other preparations which contain Cocaine or any of its salts (alpha or beta eucaine) or any of their salts or any synthetic substitute for them.

OFFICIAL PREPARATIONS EXEMPTED.

The following official preparations contain Opium, Morphine, Codeine, etc., but not in sufficient quantity to require a physician's prescription or the special order blank, when purchased or sold or when dispensed by a physician or a pharmacist:

U. S. P. PREPARATIONS.

Camphorated Tincture of Opium—1.9 grains opium in fl. ounce.
Compound Mixture of Glycyrrhiza—0.218 grain in fl. ounce.
Opium Plaster.

N. F. PREPARATIONS.

Acid Camphor Mixture—0.54 grain opium in fl. ounce.
Antiperiodic Tincture (Warburg's Tinc.)—0.114 grain opium in fl. ounce.
Carminative Mixture—Dalby's—1½ grains opium in fl. ounce.
Compound Elixir of Tar—0.16 grain morphine in fl. ounce.
Compound Liniment Opium.
Compound Syrup of Morphin—0.25 grain in fl. ounce.
Compound Syrup of White Pine—0.23 grain morphine in fl. ounce.
Elixir of Terpin Hydrate with Codeine—1 grain codeine in fl. ounce.
Jackson's Pectoral or Cough Syrup—0.25 grain morphine hy'dchld in fl. ounce.
Mixture of Sassafras and Opium—1.6 grains opium in fl. ounce.
Pectoral Tincture—2 grains opium in fl. ounce.
Stokes' Expectorant—0.319 grain opium in fl. ounce.
Mixture of Magnesia and Asafetida (Dewees' Carminative)—0.456 grain opium in fl. ounce.
Troches of Morphine and Ipecac—0.7 grain in av. ounce.

OFFICIAL DRUGS AND PREPARATIONS.**Restricted by the Opium and Coca Law.**

Apomorphine Hydrochloride, U. S. P.
Coca (Leaves) U. S. P.
Cocaine, U. S. P.
Cocaine Hydrochloride, U. S. P.
Codeine, U. S. P.
Codeine Phosphate, U. S. P.
Codeine Sulphate, U. S. P.
Elixir Celery Compound, N. F.
Elixir Chloroform Compound, N. F.
Elixir Coca, N. F.
Elixir Coca and Guarana, N. F.
Elixir Terpin Hydrate with Heroin, N. F.
Extract Opium, U. S. P.
Fluidextract Coca, U. S. P.
Mixture Chloroform and Cannabis Indica Compound, N. F.
Mixture Diarrhea, No. 1 (Sun Cholera), N. F.
Mixture Diarrhea, No. 2 (Squibb), N. F.
Mixture Diarrhea, No. 3 (Loomis), N. F.
Mixture Diarrhea, No. 4 (Thielmann), N. F.
Mixture Diarrhea, No. 5 (Velpau), N. F.
Morphine, U. S. P.
Morphine Acetate, U. S. P.
Morphine Hydrochloride, U. S. P.
Morphine Sulphate, U. S. P.
Oleate Cocaine, U. S. P.
Opium, U. S. P.
Opium, denarcotized, U. S. P.
Opium, granulated, U. S. P.
Opium, powdered, U. S. P.
Pencils, Cocaine (Unna), N. F.
Pill Anti-Neuralgic, No. 1 (Gross), N. F.
Pill Anti-Neuralgic, No. 2 (Brown-Sequard), N. F.
Pill Opium, U. S. P.
Pill Opium and Camphor, N. F.
Pill Opium and Lead, N. F.
Powder, Anti-catarrh (snuff), N. F.
Powder, Chalk, Aromatic with Opium, N. F.

Powder, Ipecac and Opium (Dover), U. S. P.
Powder, Kino Compound, N. F.
Powder Morphine Compound (Tully), U. S. P.
Solution Morphine Citrate, N. F.
Solution Morphine, Hypodermic (Magendie), N. F.
Syrup Codeine, N. F.
Syrup Ipecac and Opium (Dover), N. F.
Syrup Morphine Sulphate, N. F.
Syrup Poppy, N. F.
Tincture Ipecac and Opium, U. S. P.
Tincture Kino Compound, N. F.
Tincture Opium, U. S. P.
Tincture Opium, deodorized, U. S. P.
Tincture Poppy, N. F.
Troches Glycyrrhiza and Opium, U. S. P.
Troches Morphine and Ipecac (U. S. P. 18.00).
Vinegar Opium, U. S. P.
Wine Coca, U. S. P.
Wine Coca, Aromatic, N. F.
Wine Opium, U. S. P.

DRUGS AND CHEMICALS.

Acid Meconic.
Antispasmin.
Apocodeine Alkaloid.
Apocodeine Hydrochloride.
Apomorphine Muriate Amorphous.
Apomorphine Hydrochloride, U. S. P.
Apomorphine Sulphate.
Beta-Eucaine.
Benzoyl Egonine.
Cocaine Alkaloid, U. S. P.
Cocaine Borate.
Cocaine Carbolate.
Cocaine Citrate.
Cocaine Hydrobromide.
Cocaine Hydrochloride.
Cocaine Lactate.
Cocaine Nitrate.
Cocaine Nitrite.
Cocaine Oleate.
Cocaine Phenate.
Cocaine Salicylate.
Cocaine Sulphate.
Cocaine Tartrate.
Codeine Alkaloid, U. S. P.
Coca Leaves.
Coca Acetate.
Coca Citrate.
Coca Hydrobromide.
Coca Hydriodide.
Coca Hydrochloride.
Coca Nitrate.
Coca Phosphate.
Coca Salicylate.
Coca Sulphate.
Coca Valerianate.
Codeonol.
Cotarnine Hydrochloride.
Diacetylmorphine Alkaloid.
Diacetylmorphine Hydrochloride.
Dover Powder.
Egonine.
Egonine Hydrochloride.
Ethylidene Chloride.
Ethylmorphine Hydrochloride (Dionin).
Ethylmorphine Hydriodide.
Ethylmorphine Eucaine.
Ethylmorphine Acetate.
Ethylmorphine Hydrochloride.
Ethylmorphine Lactate.
Eucodine.
Gregory Salt.
Heroin.
Heroin Hydrochloride.
Ipecac and Opium Powder, U. S. P.
Morphine, Alkaloid, U. S. P.
Morphine, Acetate, U. S. P.
Morphine, Anisate.
Morphine, Arsenate.

Morphine, Benzoate.
 Morphine, Bimeconate solution.
 Morphine, Borate.
 Morphine, Camphorate.
 Morphine, Citrate.
 Morphine, Diacetyl (Heroin).
 Morphine, Diacetyl Hydrochloride.
 Morphine, Ferrocyanide.
 Morphine, Formate.
 Morphine, Hydriodide.
 Morphine, Hydrobromide.
 Morphine, Hydrochloride, U. S. P.
 Morphine, Hypophosphite.
 Morphine, Lactate.
 Morphine, Meconate.
 Morphine, Nitrate.
 Morphine, Oleate 2%.
 Morphine, Oleate solution 20%.
 Morphine, Phosphate.
 Morphine, Phthalate.
 Morphine, Salicylate.
 Morphine, Sulphate.
 Morphine, Tannate.
 Morphine, Tartrate.
 Morphine, Valerate.
 Narceine, Alkaloid.
 Narceine, Acetate.
 Narceine, Hydrobromide.
 Narceine, Hydrochloride.
 Narceine, Meconate.
 Narceine, Nitrate.
 Narceine, Salicylate.
 Narceine, Sulphate.
 Narceine, Valerianate.
 Narcotine, Alkaloid.
 Narcotine, Hydrochloride.
 Narcotine, Sulphate.
 Opium, Gum, U. S. P.
 Opium, Deodorized, U. S. P. Denarcotized.
 Opium, Granulated, U. S. P.
 Opium, Extract Powder, U. S. P.
 Opium, Powder, U. S. P.
 Opium, Tincture, U. S. P.
 Opium, Vinegar, U. S. P.
 Opium, Wine, U. S. P.
 Papaverine, Alkaloid.
 Papaverine, Hydrochloride.
 Papaverine, Nitrate.
 Papaverine, Phosphate.
 Papaverine, Sulphate.
 Peronin.
 Protopin.
 Stypticin (Cotarnine Hydrochloride).
 Styptol (Cotarnine Phthalate).
 Thebaine Hydrochloride.
 Thebaine Tartrate.
 Tropacocaine Hydrochloride.

AMPOULES.

Clin's Ampoules—see list E. Fougere & Co.
 Cocaine Hydrochloride (Lilly).
 Codrenin B "C" (P. D. & Co.).
 Eudrenin B "B" (P. D. & Co.).
 Morphine and Atrophine, all strengths (Lilly) (P. D. & Co.).
 Morphine and Hyoscine (Lilly) (P. D. & Co.).
 Morphine Sulph., all strengths (Lilly).

CAPSULES.

Bronchial No. 1 (Lilly).

CONFECTIONS.

Opium.
 Theriac (H. B. & W.).

CORDIALS.

Calisaya, Ferrated (Lilly).
 Coca.
 Celery Comp. (S. & D.).
 Diarrhea (Milliken).
 Kaol Comp. (Norwich).

ELIXIRS.

Ammonium Valerianate and Morphine.
 Antiasthmatic Comp.—Blackwood.
 Celery Comp.
 Celery and Black Haw.
 Celery, Kola and Coca Comp.
 Celery and Kola Comp.
 Chloroform, Comp., N. F.
 Coca.
 Coca Compound.
 Creosote Compound.
 Creosote and Terpin Hydrate, Compound.
 Diacarpine (Norwich).
 Glycerin and Heroin Compound.
 Gold Chloride (Norwich).
 Gold Chloride no Atropine (Norwich).
 Heroin.
 Heroin, Comp. No. 1, No. 2.
 Heroin and Pilocarpine Comp.
 Heroin and Terpin Hydrate.
 Kola Comp.
 Kola and Celery Comp.
 Morphine Aromatic.
 Morphine Hydrochloride.
 Morphine Valerianate.
 Opium, Deodorized.
 Pectoral, or Pulmonic.
 Pertussic Comp. (Wampole).
 Pilocarpine Comp.
 Poppy Comp. B1 and B2.
 Saw Palmetto Comp.
 Saw Palmetto and Pichi, Comp.
 Sedative.
 Terpin Creosote Comp.
 Terpin Hydrate and Codeine.
 Terpin Hydrate with Heroin.

EXTRACTS.

Coca.
 Opium, U. S. P.
 Opium Aqueous (Milliken).
 Poppy Heads.
 Warburg's Tincture.
 Warburg's Tincture, without Aloes.

EYE OINTMENTS AND COLLYRES.

Tolocaine Hydrochloride (Lilly).
 Clin's Collyres—see list E. Fougere & Co.

FLUIDEXTRACTS.

Celery Comp. (Upjohn).
 Coca, U. S. P.
 Coca and Celery.
 Coca, Soluble.
 Ipecac and Opium.
 Kola, Compound.
 Opium.
 Opium, Camphorated.
 Opium, Concentrated.
 Opium, Deodorized (see Tinctures).
 Poppy Heads.
 Saw Palmetto, Comp.
 White Pine Comp. for Syrups.
 White Pine Comp., Red, for Syrups.
 Wild Cherry, Compound.

HOMEOPATHIC REMEDIES.

Boericke & Runyon's List.

Apomorphia, 1x, 2x, 3x, in any form.
 Erythroxylon Coca, Tinct., and all potencies.
 Herion, 1x, 2x, 3x, in any form.
 Morphia sulph., 1x, 2x, 3x, in any form.
 Opium Tinct., 1x, 2x, in any form.
 Tablets, Codein 1/25 gr. 1/10 gr. 1/8 gr. 1/5 gr. 1/4 gr. 1/2 gr. 1 gr. Heroin, 1/24 gr. 1/12 gr. Morphia sulph. 1/10 gr. 1/8 gr. 1/6 gr. 1/4 gr. Tablet No. 30, 31, 35, 105, 111, 118, 133, 142, 143, 144, 157, 159, 162, 163, 182, 201, 208, 221.
 Specialties—
 Elixir Heroin and Terpin Hydrate.
 Coca Wine.

LOZENGES AND COMPRESSED LOZENGES.

Bronchitis Improved (Norwich).
Brown Mixture.
Brown Mixture Comp.
Brown Mixture and Ammonium Chloride.
Cocaine Compound.
Cocaine and Cubeb Comp.
Follicular Tonsillitis No. 3.
Glycyrrhiza and Opium, U. S. P.
Jackson's Ammonium.
Jackson's Pectoral.
Licorice and Anise Comp.
Licorice and Opium, U. S. P.
Menthol Throat.
Menthol and Cocaine Comp.
Morphine and Ipecac (H. B. & W.).
Oral Astringent (P. D. & Co.).
Red Gum Compound.
Thymo Heroin Comp.
White Pine Comp. Cough.
Wistar's Cough.
Wild Cherry Comp.

John F. Hancock & Son's List.

Acetanodeine.
Acid, Boric Comp.
Aconite Compound.
Ammonium-Codeine.
Ammonium Iodide Comp.
Antalgic.
Camphor Compound.
Chlorodyne.
Cocaine 1/20 gr. 1/10 gr.
Cocaine Compound.
Cocaine and Cubeb.
Cocaine and Opium.
Cocaine and Rhatany.
Cocanilid.
Codeine 1/10 gr. 1/5 gr.
Cubeb Compound.
Heroin No. 1 1/24 gr. No. 2 1/12 gr.
Heroin Compound.
Lobelia Compound.
Muco-Sedative.
Muco Stimulant.
Rhatany and Opium.
Sedative, S.
Terpin-Heroin-Benzoin.

OLEATES.

Cocaine, U. S. P.
Mercury and Morphine (Squibb).
Morphine, 10%.

PILLS AND GRANULES.

Acetanilide and Quinine Comp.
Acetphenetidin and Quinine Comp.
Alterative.
Ammonium Muriate, Comp.
Anodyne.
Anodyne Granules (Norwich).
Antispasmodic.
Anti-Syphilitic Nos. 1 and 2—Castano.
Aphrodisiac Improved.
Aphrodisiac Comp (P. D. & Co.).
Astringent (Upjohn).
Atropine and Morphine B, C, D (Upjohn).
Blue Mass Compound.
Calomel and Opium.
Camphor Compound.
Camphor and Opium N. F. No. 1 and No. 2.
Camphor, Opium and Hyoscyamus.
Camphor, Opium and Lead Acetate.
Camphor, Opium and Tannin.
Chanteud's Granules—see list of E. Fougere & Co.
Chlorodyne.
Chlorodyne, half strength.
Chronic Dysentery—Holston.
Coca and Phosphorus, Comp.
Coca, Phosphorus and Strychnine.
Cocaine Hydrochloride (all sizes).

Codeine (all sizes).
Codeine Sulphate (all sizes).
Codeine Sulphate Metric Granules (Norwich).
Colax.
Cold, Laxative (Upjohn).
Diaphoretic.
Diarrhea Pellets.
Dover Powder.
Dysmenorrhea—Brooks.
Dysmenorrhea—Alvord.
Heims.
Heroin (all sizes).
Hydrargyrum Comp. No. 1.
Ipecac and Opium (all sizes).
Ipecac and Opium Comp.
Ipecac and Squill B. P.
Mercury Iodide and Opium—Ricord.
Mercury Protiodide and Opium.
Mercury and Chalk No. 2.
Mercury Yellow Iodide and Opium.
Morphatropia (all sizes).
Morphine Acetate 1/8 gr. 1/4 gr.
Morphine and Atropine No. 1, No. 2 and No. 4.
Morphine Hydrochloride 1/8 gr.
Morphine and Belladonna No. 1.
Morphine Sulphate (all sizes).
Morphine Valerianate (all sizes).
Neuralgic, Brown-Sequard, N. F.
Neuralgic, Brown-Sequard, half and quarter strength.
Neuralgic, Gross, N. F.
Neuralgic, Gross, half strength.
Neuralgic, Gross, Pink Granules.
Opium and Bismuth.
Opium, Camphor and Lead Acetate.
Opium Extract (all sizes).
Opium U. S. P., 1 gr. 1/2 gr.
Opium, Powdered (all sizes).
Opium with Soap.
Opium and Camphor, N. F.
Opium, Camphor and Tannin (Wampole).
Opium and Lead, N. F. (all sizes).
Opium and Silver Nitrate No. 1 and No. 2.
Opium, Tannin and Lead.
Phenacetine and Quinine Comp.
Quinine and Dover's Powder.
Sedative—Mann.
Silver Nitrate and Opium.
Syphilitic, Ricord, Modified.
Terpin Hydrate and Codeine No. 1 and No. 2.
Warburg's Tincture R2.
Warburg's Tincture (without Aloes) R4.

POWDERS.

Brown Mixture.
Chalk Aromatic with Opium, N. F.
Diaphoretic—Beach's.
Ipecac and Opium (Dover), U. S. P.
Ipecac and Opium Camphorated.
Morphine Compound (Tully's), U. S. P.
Tinct. Poppy Compound.
Tully's Modified.

SOLUTIONS.

Chlorodyne (5717).
Cocaine Hydrochloride, 2% with Acetoform.
Cocaine Hydrochloride, 4% with Acetoform.
Morphine Citrate.
Morphine Hypodermic.

SUPPOSITORIES.

Sharp & Dohme's List.
Cacao Butter Aural No. 162J.
Rectal—
No. 1A to No. 11A incl.
No. 15A to No. 23A incl.
No. 24B.
No. 31A, No. 32A, No. 33A, No. 39A, No. 40A.
No. 41A, No. 42A.
Norwich Pharmacal Co.'s List.
Morphine and Atropine.

Opium 1 gr. 2 gr.
Opium and Belladonna.
Opium and Hyoscyamus.
Morphine Sulphate $\frac{1}{8}$ gr.
Unguentine Cones with Opium.

SYRUPS.

Anodyne Pine Comp. with Heroin.
Balm Gilead Comp. (Norwich).
Balm with Heroin (Norwich).
Blood Root and Cherry Compound No. 2 (Norwich).
Blood Root with Diacetylmorphine Hydrochloride (Upjohn).
Blood Root with Heroin Hydrochloride (Upjohn).
Cocillana Comp.
Codeine (Squibb).
Dover Powder, N. F.
Eubenol-Dionin (Norwich).
Heroin Compound.
Heroin and Glycerine Comp.
Heroin and Sanguinaria Comp.
Heroin Comp. Mentholated.
Heroin and Tolu Comp.
Ipecac and Opium (Dover), N. F.
Palmo-Dionin (Upjohn).
Pinus Alba Comp.
Sedative Comp. (Norwich).
Terbene Compound.
Terbene with Dionin (Norwich).
Terbene with Heroin, Tolu and Cannabis Comp. (Norwich).
Terbene Aromatic with Heroin.
Tolu Compound.
Tolu and Heroin Compound.
White Pine Compound.
White Pine with Heroin.
White Pine Terpin Hydrate and Heroin.
White Pine with Heroin and Ammonia Muriate.
Wild Cherry Compound.
Wild Cherries and Terbene Comp. with Heroin (Norwich).
Wild Cherry and Heroin (Milliken).

TABLETS AND TABLET TRITURATES.

Acetanilide Compound Nos. 5 and 7.
Acetanilide and Tully's (Norwich).
Acetanilide Comp. with Codeine No. 1.
Acetanilide Comp. with Heroin.
Acetanilide and Quinine Compound.
Acetanilide Salicylate and Morphine Nos. 2 and 3.
Acetanilide and Sodium Comp. with Codeine.
Acetanilide and Sodium Comp. with Heroin.
Acetanilide and Sodium Salicylate Comp.
Acetanilide with Codeine Nos. 26 and 216 (Upjohn).
Aconite Compound.
Alkaloid Codeine (Lambert & Lowman).
Ammonium Chloride Comp. with Codeine.
Ammonium Chloride Comp. with Diacetylmorphine.
Ammonium Chloride Comp. with Heroin.
Ammonium Muriate Comp. with Codeine.
Ammonium Muriate Comp. with Heroin.
Ammonium Salicylate Comp. Nos. 1 and 3.
Ammonium Salicylate and Acetanilide Comp. $\frac{1}{2}$ strength.
Alum Comp. No. 1 for injections.
Alum Compound No. 2.
Anodyne Comp. with Codeine.
Anodyne Nos. 1 and 2.
Anodyne Expectorant—Bolton.
Anodyne Expectorant No. 2.
Anodyne Infant—Waugh.
Anodyne (Lilly).
Anodyne, Mild.
Analgesic Comp. with Codeine.
Analgesic Compound.
Analgesic Comp. and Heroin.
Analgesic Comp. with Sodium Salicylate and Codeine (Wampole).
Antiasthmatic—Stevens.
Antibronchitis.

Anticold.
Anticold No. 3—Averill.
Anticold, Gordon.
Antidiabetic Nos. 1 and 2.
Antilupia and Codeine (Norwich).
Antipyrine and Heroin Comp. (Squibb).
Antisyphilitic No. 2 (Upjohn).
Antivomiting Nos. 1 and 2.
Apomorphine Hydrochloride (all sizes).
Aspirin Compound—Kyle.
Aspirin and Codeine.
Astringent Wash.
Atropine-Aconite Comp.
Bismuth Catechu Comp.
Bismuth and Ipecac Nos. 1 and 2.
Bismuth and Opium.
Bismuth and Paregoric Comp.
Bismuth, Opium and Carbolie Acid.
Bismuth, Opium and Phenol (Milliken).
Bismuth and Salol Compound.
Bismuth, Subnitrate, Opium and Carb. Acid.
Blue Mass Compound.
Boric Acid and Potassium Comp.
Bromides Compound.
Bromides Compound $\frac{1}{2}$ strength.
Bromide Compound Nos. 1 and 2—Hubbard.
Bronchitis.
Bronchitis—Delafield.
Bronchitis, Improved.
Bronchitis, No. 3.
Brown Mixture (all sizes).
Brown Mixture Compound.
Brown Mixture and Ammonium Chloride Nos. 1 and 2.
Brown Mixture Comp. modified with Heroin.
Caffocodine (Fraser).
Caffocodine Compound (Fraser).
Calomel and Dover Powder (all sizes).
Calomel and Opium Nos. 1 and 2.
Camphor, Opium and Tannin.
Cannabis and Aconite Comp.
Cannabis and Codeine.
Cardiac Asthma.
Cardiac, Waldstein.
Carminative No. 2.
Chlorodyne.
Chlorodyne, half strength.
Cholera Infantum Nos. 2 and 3.
Coca, fluidextract.
Cocaine.
Cocaine Hydrochloride (all sizes).
Cocaine Hydrochloride, $\frac{1}{8}$ gr. for solution (Upjohn).
Cocaine and Cubeb Compound.
Cocaine without sugar (all sizes).
Codeine (all sizes).
Codeine Alkaloid (all sizes).
Codeine Phosphate (all sizes).
Codeine Sulphate (all sizes).
Colax.
Cold Nos. 1 to 6 incl.
Cold, Gage.
Cold, No. 3.
Cold, No. 3 with Aloin.
Cold, Laxative.
Cold, Laxative, B "C" (P. D. & Co.).
Cold, Preferred.
Colic Nos. 1 and 2 Infantile.
Copper and Opium.
Coryza Nos. 1 to 6 incl. (see Note).
Coryza—Bishop—Kenyon—Richards—Smith.
Coryza, Improved.
Coryza, Hospital.
Coryza with Heroin.
Cough Nos. 1 and 2.
Cough No. 3—Lyon.

NOTE.—Parke, Davis & Co. announce that their Coryza Tablets—C. T. 243; C. C. T. 65; T. T. 722; C. C. T. 66, and C. C. T. 376, do not contain any opiate. Examine the label!

Cough—Drossner—Goodwin.
 Cough, Infant.
 Cough, Adult.
 Cough, Palliative (P. D. & Co.).
 Cough, persistent with Diacetylmorphine.
 Cough, persistent with Heroin.
 Creosote Compound.
 Croup No. 2.
 Croup, Spasmodic.
 Damiana Comp. No. 2 (Milliken).
 Diabetes.
 Diacetylmorphine (all sizes).
 Diacetylmorphine Hydrochloride (all sizes).
 Diaphoretic—Whitford.
 Diarrhea.
 Diarrhea, Fermentative.
 Diarrhea, Nos. 1, 2 and 9.
 Diarrhea, No. 3—Sullivan.
 Diarrhea, No. 4—Gay.
 Digitalis Compound No. 1.
 Dionin (all sizes).
 Dover Compound—Terryberry.
 Dover Powder (all sizes).
 Dover Powder and Quinine (P. D. & Co.).
 Enteric—Sillo.
 Enteritis—Haskell.
 Expectorant—Rankin—Harvey.
 Expectorant, Nos. 4 and 5—Jones.
 Expectorant, No. 6.
 Expectorant, Tonic.
 Febrifuge.
 Fever.
 Fever—Kenyon.
 Follicular Tonsillitis.
 Gastric Sedative.
 Gastritis.
 Gastritis No. 1—Pepper.
 Grip Special (Fraser).
 Grippe No. 1—Becker.
 Grippe No. 2—Drake—Quigley.
 Grippe No. 3.
 Headache Neuralgia—Rodgers.
 Helonias Compound, Vaginal.
 Hemostatic.
 Heroin (all sizes).
 Heroin Compound (all sizes).
 Heroin Hydrochloride (all sizes).
 Heroin and Terpin Hydrate (all sizes).
 Hydrastine Compound.
 Hydrastine white Alkaloid Comp.
 Hyoscyamus Cough.
 Hysteria.
 Injection Compound No. 2 (Wampole).
 Ipecac and Opium, see Dover Powder.
 Krameria Compound.
 Laxative Cold No. 2.
 Lead and Laudanum.
 Lead and Opium.
 Leucorrhea (Helonias Astringent).
 Leucorrhea, Mild (Helonias Astringent).
 Mercurous Iodide and Opium Nos. 1 and 2.
 Mercury and Opium.
 Mercury Protiodide and Opium.
 Mercury with Chalk and Dover Powder.
 Mercury with Chalk and Dover Powder R "B"
 (P. D. & Co.).
 Morphine Acetate (all sizes).
 Morphine Bromide Compound.
 Morphine Bromide No. 2.
 Morphine Hydrochloride (all sizes).
 Morphine and Salicylic Acid Nos. 1 and 2.
 Morphine Sulphate (all sizes).
 Morphine and Atropine (all sizes).
 Morphine and Atropine (all combinations).
 Morphine and Belladonna.
 Naso-Pharyngeal.
 Nausea, Pl.
 Nausea, No. 2 and No. 4.
 Neuralgic—Arthur.
 Neuralgic—Brown-Sequard.

Neuralgic—Brown-Sequard, ½ strength.
 Neuralgic—Dunlap.
 Neuralgic—Gross.
 Neuralgic—Gross, ½ strength.
 Neuralgic Headache—Myers.
 Neuralgic No. 10—Thrush.
 Opium, Camphor and Tannin.
 Opium, Camphor and Ammonium Carb.
 Opium, Camphor and Lead Acetate.
 Opium, Camphorated, Tinct. (all sizes).
 Opium Deodorized, Tinct.
 Opium Powdered (all sizes).
 Opium Tinct., U. S. P. (all sizes).
 Opium and Camphor.
 Opium and Camphor R "B" (P. D. & Co.).
 Opium and Hyoscyamus.
 Opium and Ipecac Compound.
 Opium, Ipecac and Blue Mass.
 Opium and Lead.
 Paragoric Compound.
 Paragoric, U. S. P. equivalent to 5 and 10 min.
 Phenacetin Compound.
 Phenacetin and Quinine Compound.
 Pinus Alba Compound.
 Potassium Chlorate and Cocaine.
 Quinine and Dover Powder.
 Rheumatism Nos. 1 and 3.
 Rheumatism, Improved.
 Rheumatism—Liggett.
 Salcitol Compound (Stoddard).
 Salcitol Codeia (Stoddard).
 Salicylate Acid and Morphine Nos. 1 and 2.
 Salmacrin (Weaver).
 Salol Compound (all sizes).
 Sanguinaria Compound (Stoddard).
 Sanguinaria Comp. and Codeine (Norwich).
 Sciatica Improved (Norwich).
 Sun Cholera.
 Syphilitic.
 Syphilitic R "A".
 Tartar Emetic and Morphine—Hall.
 Terpin-Hydrate Compound—Brockbank.
 Terpin and Creosote Comp. No. 2.
 Terpin Diacetylmorphine No. 2 (Upjohn).
 Terpin and Heroin Nos. 1 and 2.
 Terpin and Codeine (all sizes).
 Terpin and Heroin Comp. (P. D. & Co.).
 Throat Mentholated.
 Throat—Quinlan.
 Tully's Powder (all sizes).
 Uterine Astringent and Antiseptic.
 Voice.
 Warburg's Tincture No. 1.
 Warburg's Tincture No. 2 without Aloes.
 White Pine Compound.
 Whooping Cough No. 3 (Wampole).
 Whooping Cough No. 4.
 Whooping Cough Improved (Norwich).

TABLETS—DISPENSARY.

Cocaine.
 Cocaine Hydrochloride (all sizes).
 Codeine (all sizes).
 Codeine Alkaloid.
 Codeine Phosphate (all sizes).
 Codeine Sulphate (all sizes).
 Heroin Hydrochloride (all sizes).
 Morphine Hydrochloride.
 Morphine Sulphate (all sizes).

TABLETS—HYPODERMIC.

Adrenalin and Cocaine.
 Adrenalin R "B" "C" "D" (P. D. & Co.).
 Adrenalin and Eucaine R "B" (P. D. & Co.).
 Antiasthmatic, Timmerman.
 Apomorphine Hydrochloride (all sizes).
 Apomorphine and Strychnine.
 Cardiac No. 2 (Norwich).
 Cocaine Hydrochloride (all sizes).
 Codeine Phosphate (all sizes).
 Codeine Phosphate no sugar (all sizes).
 Codeine Salts and all combinations.

Codeine Sulphate (all sizes).
 Diacetylmorphine Hydrochloride (all sizes).
 Eserine and Morphine.
 Eucaïne Hydrochloride (all sizes).
 Eucaïne Lactate.
 Heroin Hydrochloride (all sizes).
 Heroin Salts and all combinations.
 Hubbard's Bromides Nos. 1 and 2 (Squibb).
 Hyoscine Comp.
 Hyoscine and Morphine (P. D. & Co.).
 Hyoscine and Morphine Bromide Comp.
 Hyoscine and Morphine Brom. Comp. $\frac{1}{2}$ strength.
 Local Anesthetic, Dental (all sizes).
 Morphine Bimeconate.
 Morphine and Cactin (Milliken).
 Morphine Comp. Nos. 3, 9, 10, 11, 18 (Wampole).
 Morphine Hydrochloride (all sizes).
 Morphine and Hyoscine.
 Morphine Meconate (all sizes).
 Morphine Nitrate (all sizes).
 Morphine and Strychnine.
 Morphine Salts and all combinations.
 Morphine Sulphate (all sizes).
 Morphine and Atropine (all sizes).
 Morphine, Atropine and Strychnine (all sizes).
 Morphine and Strychnine (all sizes).
 Morphine Sulphate (Fraser).
 Morphine Sulphine and Atropine Sulphate (Fraser).
 Morphine Compound—Tupper.
 Nitroglycerin Comp. (Lilly).
 Nitroglycerin, Strychnine and Morphine.
 Scopolamine and Morphine (all sizes).
 Scopolamine Morphine Comp. (P. D. & Co.).

TABLETS—OPHTHALMIC.

Cocaine Hydrochloride.

TABLETS—VAGINAL.

Leucorrhea, Improved (Lilly).
 Morphine and Belladonna.
 Uterine Compound (Lilly).
 Vaginal Astringent No. 2 (Norwich).
 Vaginal Astringent No. 1, No. 2 (Wampole).

TABLETS—VETERINARY HYPO.

Cocaine Hydrochloride (all sizes).
 Codrenin (P. D. & Co.).
 Colic—Knowles.
 Morphine Sulphate (all sizes).
 Morphine and Atropine (all sizes).
 Morphine and Hyoscine (P. D. & Co.).

TINCTURES.

Bateman's Drops (Upjohn).
 Coca Leaves.
 Ipecac and Opium, U. S. P., 8th Revision.
 Kino Comp. (Squibb).
 Opium Acetic.
 Opium U. S. P.
 Opium Camphorated, U. S. P.
 Opium Comp., N. F.
 Opium Comp. (Squibb's Mixture).
 Opium, Denarcotized.
 Opium, Deodorized, U. S. P.
 Opium, Pectoral.
 N. T. Erythroxylin (Coca).
 Warburg's Tincture, N. F.
 Warburg's with Aloes.

WINES.

Coca, U. S. P.
 Coca, Aromatic, N. F.
 Coca and Beef.
 Coca, Beef and Iron.
 Coca and Celery.
 Coca and Hypophosphites (Lilly).
 Coca and Phosphorus Comp. (Merrell).
 Kola Compound.
 Opium, U. S. P.

SPECIALTIES AND PROPRIETARIES.

Adrenalin Compound Suppositories.
 Adrenalin and Cocaine Tablets,

Adrenalin B "B" "C" "D".
 Adrenalin Eucaïne B "B".
 Apii Compound (Hammond).
 Antigia Powder & Tablets.
 Antigia and Codeine.
 Antigia and Quinine.
 Battley's Liquor Opii Sedativus.
 Bechol with Heroin.
 Bronchoids.
 Bronchial Sedative, Palmer.
 Browne's Chlorodyne.
 Brown's (Dr. George) Eye Drops.
 Brown's Cough Syrup.
 Brown's Laryngeal Gargle.
 Brown's Throat Lozenges.
 Cannabis Comp., Merrill.
 Capsodyne.
 Cerebral Sedative Comp.
 Chloro-Cannabine.
 Chlor-Anodyne.
 Chlorodyne, Morphine sulph.
 Chlorodyne, American—S. & D.
 Chlorodyne, Chandler's Modified.
 Chlorodyne, Chandler's.
 Chlorodylina.
 Cholera Mixture—Shoemaker's.
 Codeonal—Knoll.
 Codrenin B "A" "B" "C".
 Codrenin Ampoules B "C".
 Creo-Pin.
 Creosote Comp.
 Cuanha Comp.
 Eudrenin Ampoules B "B".
 Expectorant Wafers—Merrill.
 Foutz's Certain Kolik Remedy.
 Glycerite Heroin.
 Glycerin Heroin Comp.
 Glycerite Heroin Comp.
 Glycerole Heroin Comp.
 Glycerole Heroin and Terpin Hydrate.
 Glyceroin.
 Glyco Creosote.
 Glyco-Heroin.
 Glyco-Pin.
 Glyco-Terpin.
 Gonorrhea Treatment.
 Herobalm.
 Horoglypine.
 Heroin Sedative Comp.
 Herokal.
 Herolyptus.
 Heropine.
 Heroton.
 Herotone Tablets.
 Hypnotic Comp.
 Iodo Codeine.
 Ichthyannic Suppositories.
 Lactu Heroin.
 Lactu Heroin Modified.
 Linctus Comp.
 Liquor Paverine.
 Locathesia.
 Mead's Terpo-Dionin.
 Morphol.
 Nebulol Nos. 41 and 47 (Upjohn).
 Ocusol "B".
 Palmettine.
 Palmo-Dionin (Upjohn).
 Pantopon.
 Pantopon Scopolamine.
 Paracodin—Knoll.
 Pinosa.
 Pixine Colic Cure.
 Pruni-Heroin.
 Rami Drops.
 Sanguin Heroin.
 Sedapine.
 Stricture Crayons.
 Styptol—Knoll.
 Syr. Heroplaga.

Syr. Terbenol Aromatic and Heroin.
Terpinine.

Terpinola.

Terpo-Dionin—Mead's.

Unguentine Cones with Opium.

"

Crayons.

"

Crayons with Protargol.

E. FOUGERA & CO.'S LIST.

Battley's Liquor Opii Sedativus (Opium).

Browne's Chlorodyne (Opium).

Chanteaud's Granules.

No. 64 (Cocaine).

No. 65 (Cocaine Chlorhydrate).

No. 66, 123, 14 (Codeine).

No. 102, 11, 15, 21 (Gregory Salt).

No. 46 (Apomorphine).

No. 90 (Morphine Bromhydrate).

No. 10 (Morphine Chlorhydrate)
regular No. 10 has no Morphine.

No. 91, 9 (Morphine Chlorhydrate).

No. 25 (Bromhydrate).

No. 93 (Narceine).

Clin's Collyres:—

No. 400, 401 (Dionine).

No. 402, 403 (Stovaine).

No. 390, 391, 438, 439, 642, 647, 646 (Cocaine Chlorhydrate).

Clin's Ampoules for Hypo. Injections:—

No. 236, 237, 238 (Cocaine Chlorhydrate).

No. 207 (Apomorphine).

No. 293, 294, 212, 369 (Morphine Chlorhydrate).

No. 511, 206, 221 (Cocaine).

No. 355, 356, 661, 336 (Eucaine B).

No. 356 (Cocaine Chlorhydrate).

No. 261 (Heroin).

No. 593 (Morphine).

No. 548 (Morphine Sulphate).

No. 374, 297 (Morphine Chlorhydrate).

No. 346, 347, 315, 636 (Stovaine).

Rami Drops (Codeine).

LIST OF EXHIBITORS, A. M. A. COMMERCIAL EXHIBIT.

PUBLISHERS AND BOOKS.

Appleton & Co., D., 29-35 West 32nd St., New York City; No. 29.

Blakiston Son & Co., P., 1012 Walnut St., Philadelphia, Pa.; No. 4.

Lea & Febiger, 706 Sansom St., Philadelphia, Pa.; No. 47.

Lippincott & Co., J. B., East Washington Square, Philadelphia, Pa.; No. 7.

Mosby & Co., C. V., Metropolitan Bldg., St. Louis, Mo.; N. ½ No. 12.

Rebman Company, Herald Square Bldg., New York City; No. 3.

Saunders Co., W. B., W. Wash. Square, Philadelphia, Pa.; Nos. 25, 26, 27.

Wood & Co., Wm., 51 Fifth Ave., New York City; No. 65.

FOODS AND MILK PREPARATIONS.

Borden's Con. Milk Sales Co., 108 Hudson St., New York City; No. 66.

Horlick's Malted Milk Co., Racine, Wis.; Nos. 110, 111.

Mellin's Food Company, 221 Columbus Ave., Boston, Mass.; Nos. 90, 91.

Uncle Sam Breakfast Food Co., Omaha, Nebr.; No. 36.

Welch Grape Juice Company, Westfield, N. Y.; Nos. 93, 94.

CLINICAL LABORATORIES.

Pacific-Wassermann Laboratories, Pacific Bldg., San Francisco; No. 45.

APPARATUS, INSTRUMENTS, AND FURNITURE.

Ambulatory Pneumatic Splint Mfg. Co., 30 Randolph St., Chicago; Nos. 83 and 86.

Betz Company, Frank S., Hammond, Indiana; Nos. 104, 105, 106.

Carnes Artificial Limb Co., Kansas City, Missouri; No. 50.

De Vilbiss Mfg. Co., 1218 Jackson St., Toledo, Ohio; No. 44.

Hittenberger Co., C. H., 1108 Market St., San Francisco; No. 11.

Leitz, Ernst, 30 East 18th St., New York City; No. 17.

Life-Saving Devices Co., 565 W. Wash. Blvd., Chicago; No. 109.

Meyer, Percy J., 359 Sutter St., San Francisco, Calif.; Nos. 18, 34.

Meyrowitz, E. B., Inc., 237 Fifth Ave., New York City; Nos. 63, 64.

Mueller & Co., V., 1779 Ogden Ave., Chicago, Ill.; Nos. 23, 24.

Pilling & Son, Geo. P., Arch and 23rd Sts., Philadelphia, Pa.; No. 43.

Robertson Mfg. Co., 422 East Eighth St., Cincinnati, Ohio; S. ½ No. 12.

Scanlon-Morris Co., Madison, Wis.; Nos. 21, 22.

Teter Manufacturing Co., Williamson Bldg., Cleveland, Ohio; No. 33.

Weder Mfg. Co., 4545 Germantown Ave., Philadelphia, Pa.; No. 46.

ELECTRICAL APPARATUS AND ACCESSORIES.

Brady & Co., Geo. W., 754 So. Western Ave., Chicago; No. 71.

Campbell Electric Co., Lynn, Mass.; No. 37.

Eastman Kodak Co., Rochester, N. Y.; No. 35.

Electro-Surgical Instrument Co., 21 No. Water St., Rochester, N. Y.; No. 5.

Macalaster-Wiggin Company, 79 Sudbury St., Boston, Mass.; No. 70.

Meyer & Co., Wm., 825 Washington Blvd., Chicago; No. 85.

Physician's Specialty Co., Leesburg, Va.; S. ½ No. 51.

Scheidel-Western X-Ray Co., 737 W. Van Buren St., Chicago; Nos. 99, 100, 101, 102 and 103.

Victor Electric Co., Jackson Blvd. and Robey St., Chicago; Nos. 107 and 108.

Wappler Electric Controller Co., 175 East 87th St., New York City; Nos. 42, 52.

PHARMACEUTICALS AND BIOLOGIC PRODUCTS.

Arlington Chemical Company, Yonkers, N. Y.; No. 38.

Fairchild Brothers & Foster, Fairchild Bldg., New York City; No. 45.

Lackenbach, Fred I., 908 Butler Bldg., San Francisco, Calif.; No. 6.

Mulford Company, H. K., 412 So. 13th St., Philadelphia; Nos. 39, 40.

Schering & Glatz, 150 Maiden Lane, New York City; No. 38.

Squibb & Son, E. R., 80 Beekman St., New York City; No. 8.

UNDERWEAR AND SURGICAL PRODUCTS.

Berger Brothers, 1098 Chapel St., New Haven, Conn.; No. 10.

Deimel Linen Mesh System Co., 236 Fifth Ave., New York City, or 142 Sansome St., San Francisco; No. 20.

Linen Underwear Co., Greenwich, N. Y.; No. 95.

SANITARIA.

The Oaks Sanitarium, Los Gatos, Calif.; No. 81.

Arrowhead Hot Springs, Arrowhead, Calif.; No. 53.

Kops Bros., New York City; No. 30.

DR. CARREL'S WORK IN FRANCE.

Miss Katharine Lilly, head nurse of the Department of Surgery of the Rockefeller Institute for Medical Research, has gone with a detachment of

nurses being sent by the American Red Cross to the American hospital at Yvetot.

Miss Lilly herself is going to France for the especial purpose of assisting Dr. Alexis Carrel, of the Rockefeller Institute for Medical Research. Dr. Carrel now has been detached from work at the Lyons hospital and placed by the French Government in charge of a hospital at Compeigne, which is near the northern line of battle.

For the use of the patients in charge of Dr. Carrel and his assistants, the Government has requisitioned a hotel which has been converted into a hospital with accommodations for about one hundred persons. The Government will provide administrative officers as well as competent surgeons suggested by Dr. Carrel, to carry on the regular work, thus leaving Dr. Carrel free to perform his characteristic operations, especially in the line of transplanting tissues, blood vessels and nerves, and blood transfusion, and to conduct the laboratory studies which are about to be undertaken.

In order that the work under Dr. Carrel may not only be of the greatest effectiveness at the moment, but may be made permanently available to the world of science, the Rockefeller Institute is equipping Dr. Carrel's hospital with complete apparatus for research in the bacteriological, pathological, chemical and surgical conditions which may arise.

Dr. Carrel, who was spending his vacation in France at the outbreak of the War, immediately offered his services to the French Government, which were accepted. He was detailed to the military hospital at Lyons, at which there were referred to him especially the wounded with injured blood vessels and nerves, in view of the research work which he had done in these classes of injuries. From the application of the method which he discovered for suturing and transplanting blood vessels and tissue, it was possible to save limbs which otherwise would have inevitably been lost. Dr. Carrel has now been given special facilities as near as possible to the line of battle, because of the unusual conditions which have developed in this conflict incident to trench warfare.

It had been supposed that all future wars would yield small numbers of infected wounds. The facts, however, are that no previous war has yielded such a large number of infected wounds as the present one.

The reasons for this under the old conditions are developed to be as follows: poor hygienic facilities, infection of the wounds caused by the surgeons who carried the infecting germs on the operating instruments, dressings, etc., the introduction of infected material from without at the time of injury, were the sources of infection. In the present case the infections occur because the injured in trenches receive their injuries from missiles which carry dirt and soiled clothing into wounds; and also because in many cases it is days before the injured can be removed. The infections have also been of an unusual character. Formerly they were usually suppuration and pus formation. Now they are commonly due to the development of gas in the tissues and to tetanus, or lock-jaw.

This gas infection is very serious in form. It originates in bacteria of the soil, particularly soil which has been under a high state of cultivation for a long period of years. The technological term applied to the condition is gaseous phlegmon. The bacteria which cause it do not grow except in the absence of atmospheric air which the injured tissues provide. In their growth they break up the constituents of the tissues and impart a gas in which hydrogen forms a large part. This gas penetrates the tissues and carries the infected material further and further and may penetrate

into the blood, when it soon causes rapid death.

Hitherto this class of infection has been so rare that adequate means for its prevention and cure have hardly been worked out. It is in order that he might have access to this class of cases, now, unfortunately, so numerous, that Dr. Carrel has been transferred to the northern field of war. It is in order that, in addition to the regular routine work of the care of the wounded, he may study these infections especially, he is being provided by the Rockefeller Institute for Medical Research with the medical equipment requisite for this work.

In carrying out the enormous work incidental to military operations, one government alone could hardly undertake at this critical period to organize hospitals and laboratories for conducting research work. They must be quite content to deal with conditions as they arise. It is just there that Dr. Carrel's peculiar qualifications come in, and in that respect that the contribution of the Rockefeller Institute is largely made.

Hence it is that he is to have a staff consisting of bacteriologists, chemists and technicians, forming a laboratory unit in addition to the regular surgical unit of the hospital. He is fortunate in being joined by Dr. H. D. Dakin, who has been for many years in this country and has a distinguished reputation as a chemist. He has been assigned to take charge of the chemical part of this humane work of investigation.

The Rockefeller Foundation has just voted an appropriation of \$20,000, to be used under the direction of the Rockefeller Institute, in furthering medical research work under war conditions.

The Institute has had many appeals made to it for serum for use in the treatment of meningitis and dysentery, and these serums have been distributed freely.

NOVOCAIN.

Treasury Department,
Washington, February 26, 1915.

To Collectors of Internal Revenue:

The question as to whether novocain and similar preparations come under the provisions of the Harrison Narcotic Law as synthetic substitutes for cocaine is now under consideration. Until this question is fully determined, novocain and similar preparations, the exact character of which has not been fully established, will not be held as coming within the scope of this law.

Respectfully,

DAVID A. GATES,
Acting Commissioner.

NEW MEMBERS.

Robertson, J. C., Modesto.
Saunders, G. C., Turlock.
Kennedy, W. N., Ceres.
Neff, Enoch, Ceres.
Bell, Frank, San Diego.
Langstroth, Lovell, San Francisco.
Sproat, Samuel McCoy, Portola, Cal.
Gardner, J. M., Lodi.
Meyers, J. J., Lodi.
Stagner, C. E., French Camp, Cal.
Bolinger, H. J., Stockton.
Brace, Robt. Walter, Modesto.
Cartwright, S. W., Ceres.
Griswold, C. H., Modesto.
Hosmer, J. E., Modesto.

DEATHS.

Collar, A. J., Yreka, Cal.
Plymire, H. G., South San Francisco.
Simmons, Adam B., Chino.
Hasenbalg, Wm., Castro Valley, Cal.
Rogers, Lewis S., San Pedro.